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PROCEEDINGS

OF THE

DORSET NATURAL HISTORY



ANTIQUARIAN FIELD CLUB.

EDITED BY

MORTON G. STUART,

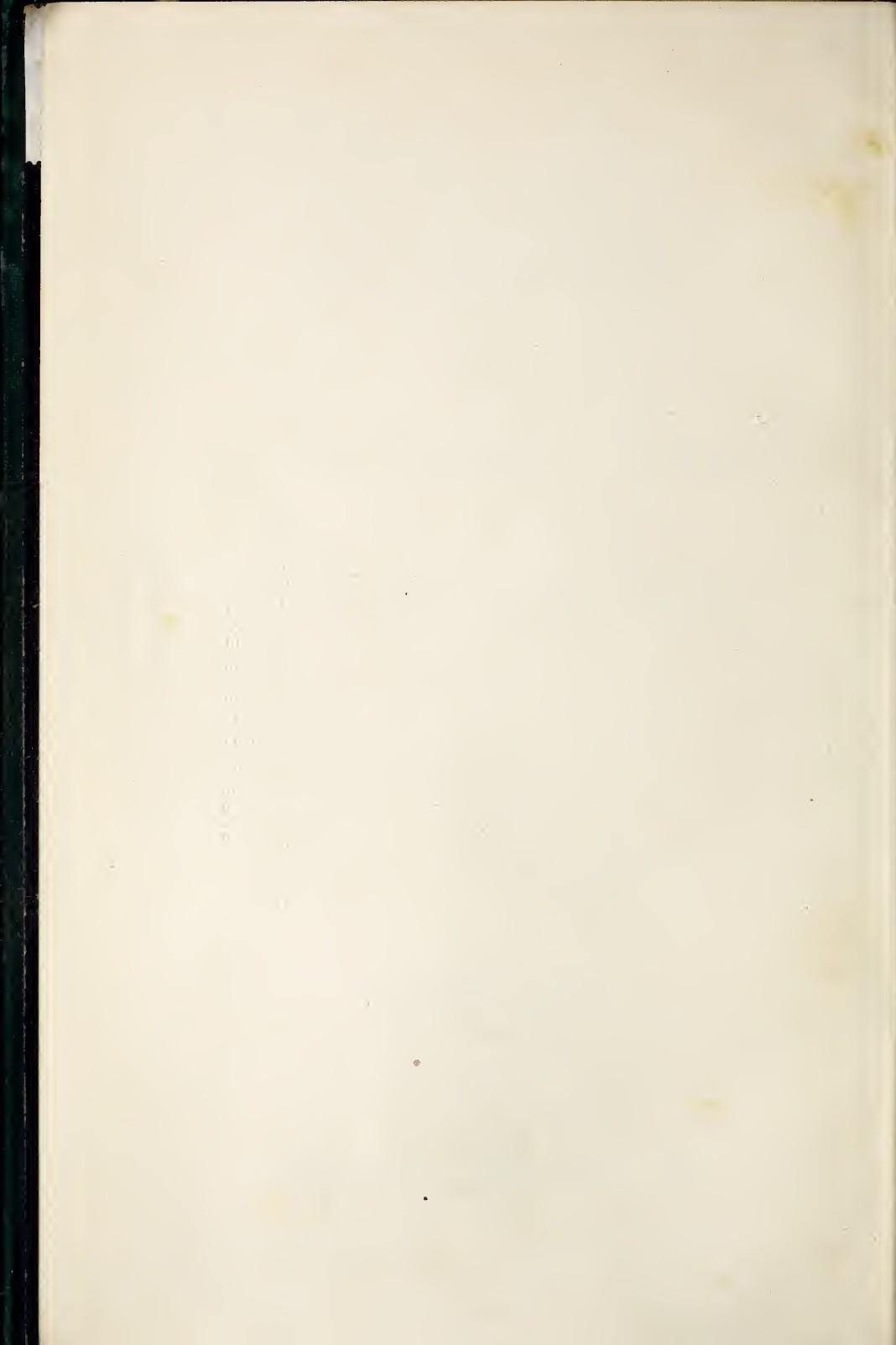
Hon. Secretary.

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NOTICE.

Members are reminded that payment of the current year's subscription (10s.) entitles them to the immediate receipt of the Vol. of "Proceedings" or other publications for the year; also that payment of arrears entitles to previous volumes, issued in those years for which the arrears are due.

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Any Member joining the Club and paying his subscription in a year for which no volume may be issued is entitled to a copy of that last previously issued.

Members are requested to give notice either to the Secretary or Treasurer of any change in their address,



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The above list contains the New Members elected in 1889, up to date of publication.



The Proceedings
OF THE
Dorset Natural History and Antiquarian
Field Club

DURING THE YEAR 1888.

By M. G. STUART, M.A., F.G.S.

The Society has held four summer meetings during the season of 1888—viz., at Dorchester on June 6th, at Cerne Abbas in June, at Wimborne in July, and at Weymouth in August, and was fortunate in securing good weather for each of the days, which, considering the continued rainfall of July and August, was a matter of congratulation. The attendances at these meetings were large, and shewed an increasing interest in the work of the Club. The number of papers bearing on points of local interest has been larger in 1888 than in any previous year, so that it was found impossible to include them all in the ordinary winter meeting of December, and it was deemed advisable to hold a second winter meeting at Dorchester in the month of February. In addition to these a Committee Meeting was held at Dorchester in December for the purpose of considering certain matters of business before laying them before the members of the Field Club generally.

The work of preparing a list of the Prehistoric Monuments of the County under the recommendation of the British Association for the Advancement of Science has made some progress, but it will probably be impossible to issue any list which at all approaches completeness until 1890. The phenological schedules, which were issued at the commencement of the year for recording observations on various natural phenomena, have brought together a considerable amount of material, a digest of which will be found in a paper contained at the end of the present volume. It is hoped that since the start has been made in this direction other members of the Society will be induced to send in their observations from time to time in these matters. The Reports of Rainfall have, in many instances, been furnished by friends, who are not members of the Field Club, and the Committee wish to take this opportunity of thanking them for their assistance.

The Ninth Vol. of "Proceedings" of the Club was issued to members early in the month of September. It is found nearly impossible to press the work of printing forward sufficiently fast to ensure the volume being ready by the first meeting of the year, held usually in the month of May.

It may be well to take the present opportunity of recording various matters of interest which have occurred within the county during the year 1888, of either Natural History or Antiquarian character. Amongst these may be mentioned the discovery, in the month of January, of a magnificent specimen of *Histionotus angularis* Eg., from the Middle Purbecks of Herston, near Swanage, more remarkable for its combination of character, than any other fossil fish. This was purchased by the President of the Society, J. C. Mansel-Pleydell, Esq., and by his generosity placed in the County Museum at Dorchester. The description of this almost unique specimen will probably be laid before the Society during the ensuing year by the President, and printed in Vol. XI. of the "Proceedings." During the month of September the discovery a Roman well was made in the parish of Winterborne Kingston, on the property of Mr. Mansel-Pleydell, and various objects of great antiquarian interest, fragments of pottery, coins, bones, &c., were found lying at the bottom. It is hoped that a full account of this discovery will appear during 1889. A Roman Tesselated Pavement was also laid bare during the year 1888 on the property of the Rev. N. Bond, of Creech Grange, near Wareham.

THE FIRST MEETING for the year 1888 was held at Dorchester on Wednesday, June 6th, in the County Museum. The day was fine and there was a good attendance. According to custom the business of the Club occupied most of the morning. The Treasurer, the Rev. O. P. Cambridge, presented his annual financial statement, which was a satisfactory one, showing receipts during the year, together with the balance in hand at the commencement of 1888, of £130 5s. 3d., and payments of £102 10s. 3d., leaving a balance of £27 15s. This favourable position in the finances of the Field Club was largely due to the generosity of the President, who had borne the whole cost of the publication of "The Birds of Dorset," a copy of which he had presented to each member of the Club. The Club last year numbered 187 ordinary subscribing members; this year they were 198, so that they were still steadily increasing in numbers. On the motion of Sir Talbot Baker, seconded by Mr. Filliter, the report was adopted. The Balance-sheet will be found printed in full on p. xxxiv.

THE ELECTION OF OFFICERS.—The Rev. Sir T. Baker moved, and Mr. Alfred Pope seconded, the re-appointment of the President, the Treasurer, and the Secretary for the ensuing year, which was agreed to.

The election of New Members then took place, bringing the number of Subscribers to over 200—the highest figure it has yet reached.

The selection of suitable spots for the Summer Meetings was the next point on the programme, and led to a prolonged discussion, since several generous invitations had been sent in from residents in various parts of the county. Eventually a ballot was taken, resulting in the selection of Cerne, Wimborne, Weymouth, and Shaftesbury for the succeeding four months. Shaftesbury, however, was ultimately given up owing to the difficulty of reaching it and the lateness of the season.

The Presidential Address on the results of the year 1887 was then delivered. Mr. Mansel-Pleydell referred to the death of Mr. Charles Warne, the archaeologist of Dorset, and of the Rev. W. Kendall, Vicar of East Lulworth, whose sudden death had deprived the Field Club of a paper which he was engaged in preparing on “The Traces of Iron-smelting in Prehistoric Times disclosed at East Lulworth.” He then alluded to the excavations which General Pitt-Rivers was so successfully carrying on at Bockley Dyke and at other spots in the neighbourhood of Rushmore, and which brought into prominence the importance of the Roman invasion in that part of Britain and the adoption of much of the civilization of the Romans by the British inhabitants of Dorsetshire. The Dyke was intimately connected with the Britons, and appeared to have been constructed, either subsequently to, or certainly not long before, the departure of the Romans from that part of the island. The conformation and extension of the rampart was very suggestive, and would indicate the existence of obstructive woods and forests in the neighbourhood, which would account for the abrupt termination of the Dyke at either extremity. It was evident that the Roman Road which flanked the Dyke was constructed first, and to make way for it a deviation was necessary, and the rampart allowed to continue its course unimpeded. Here, probably, the last struggle of the Britons and their Saxon invaders took place. The publication by General Pitt-Rivers of the results of his excavations would probably subvert much that had formerly been accepted with regard to the origin of this earthwork. After a general review of the results of palaeontological research in tracing the history of the earth since palaeozoic times, and the variations in climate which the evidence pointed to, the President passed to a review of the more purely local work accomplished in Dorsetshire during the previous twelve months. Within the last few months they had been able

to place *Elephas meridionalis* upon the palaeontological records of the county. It was of gigantic dimensions, as may be assumed from the size of one of the incisors, which could not have been less than 11 feet in length; its girth at the base was 3 feet. The deposit, which consisted of sand and flint, was covered over with a bed of glacial clay. He had no doubt after further search they would find the remains of other mammals which are usually associated with this elephant.* (The full account of the *Elephas meridionalis* Bed will be found at p. 1 of the present volume).

Mr. Richardson had obtained from the Oxford clay near Weymouth nearly the entire skeleton of a Plesiosaur, which, after some hesitation, Mr. Lydekker decides it to be a new species, and gives it the specific name of *Cimoliosaurus richardsoni*, Phillips. (An account of this will be found under the Weymouth Meeting in the month of September). Mr. Richardson was specially engaged in entomology, and had recently added to the list of British moths a new species found in the county. Mr. Damon, of Weymouth, had made an important addition to their chelonian palaeontology by the recovery of the carapace of *Pelobatochelys Blakii*, Seeley, from the Kimmeridge Clay of Weymouth, a genus founded by Seeley upon a few fragments of a carapace from the same locality. A crocodilian skull and parts of the snout in one of the cases of County Museum, labelled *Macrorhynchus*, Meyer, had attracted his (the President's) attention as the name finds no place in the British list of fossils, and to obtain its true palaeontological place he had made a comparison of it with other crocodilian remains. In the meantime Mr. T. W. Hulke had made an examination of the roof of the mouth and the position of the palate-nares, which showed it to belong to the Teleosaurian group, partaking more of the Steneosaur character than of Metriorhynchus (M. Deslonchamps' two divisions of the family). He has provisionally named it *Stenocosaurus Purbeckensis*. There were grave grounds to fear that the Abbotsbury Swannery, in which every Dorset person took a pride, was in danger through the claims of a few fishermen to the right of entry upon that part of the Fleet which from time immemorial had been reserved for the use of the swans. The case was now under the consideration of the Law Courts, and he most earnestly hoped Lord Ilchester would be able successfully to resist the claim and maintain the rights which the owners of the Swannery had exercised for more than five hundred years. Lastly, he thought every naturalist, artist, and lover of the beautiful had ground for complaint in being

* This formed the subject of a communication to the Geological Society at Burlington House on June 20th, 1889.

denied free access to the Cliffs between Swanage and Studland, which the public had enjoyed at any rate for the last 60 years. The pedestrian was now arrested near Old Harry, and obliged to make a detour of more than a mile, deprived of one of the most lovely cliff walks imaginable, the scene enlivened by crowds of sea fowl, of which Old Harry is one of the principal resting-places. The Rabbit Warren could be maintained equally well if the owner had incurred a little additional expense in placing the iron fence 20—30 yards from the cliffs and parallel to them.

. . . . The address was received with applause.

THE REPORT OF THE CURATOR OF THE MUSEUM.—Mr. H. J. Moule then read his report on the alterations and additions effected in the County Museum during 1887. He stated that many gifts and loans had found their way to the collection during the year. Geologically and archaeologically Dorset was a rich and well worked mine, but the collections actually belonging to the county hardly showed it. The Dorset fossil series was a fair one, but it did not contain 5,000 specimens on view, while a private collector possessed, by report, 2,500 specimens from the Inferior Oolite of the county alone against their 560. With regard to the Antiquarian Collection, if the loans were withdrawn the property of the county would appear to be very meagre indeed. The Curator then enumerated the principal acquisitions during the year, and the list of the Donors, concluding with an earnest request that, through the generosity of owners of collections, the cases in the Museum might be made more worthy of the county.

THE PREHISTORIC MONUMENTS OF THE COUNTY.—The Secretary made a report upon the returns which had been sent in under this head. He stated that it had been agreed to print and issue schedules to the incumbents of the various parishes in the county asking them to fill them in and return them. Returns had been made for 56 parishes, and since there were, he believed, upwards of 263 parishes in the county, there remained over 200 for which no return had been sent in. Therefore, some new plan should be devised to obtain the requisite information. A prolonged discussion took place, in which Messrs. Moule, Middleton, Cambridge, and others took place, and eventually it was decided to obtain the assistance of various members in different parts of the county to supervise the returns for parishes in their own immediate neighbourhood.

THE GEOLOGICAL CONGRESS.—The Secretary read a Circular Letter respecting the Congress to be held in London from September 17th—22nd, requesting the co-operation of the Club.

At 1.15 a break was made for luncheon, and at 2 p.m. the party started in carriages for Ridgway Hill, distant some 4 miles. Ridgway Hill is

the site of an extensive "fault," which runs 12 or 14 miles westerly towards Abbotsbury, and is of considerable geological interest. The route lay by Herringstone House to Culliford Tree, where the carriages were left to be met again later in the afternoon, and a path was taken along the old British Ridgway Road westwards, until a patch of old Tertiary Sands and Gravel was reached. From here a magnificent view of the country was obtained. The day, which had been misty and inclined to rain, had now cleared up, and the sun shone brightly. Northwards and eastwards the heath districts of Wareham and Moreton lying on the Tertiary beds were visible with the wide spreading chalk downs beyond. Standing on the edge of the escarpment and looking southwards, a second minor escarpment parallel to the first was visible, formed of the harder beds of Kimmeridge clay. The steep coombe-shaped valleys are a feature of this district, having on their sides in places, and particularly near Bincombe, several terraces clearly cut and parallel to each other, the indications of the previous state of cultivation of the soil. Here the Secretary read a paper on the Ridgway Fault, which will be found at page 55 of the present volume. At 4.15 the carriages were rejoined, and on reaching Dorchester the party were entertained at tea by the kindness of Mr. and Mrs. Wright.

A MEETING was held on Thursday, June 28th, the rendezvous being the New Inn, Cerne Abbas. At 11.30, the hour fixed, the weather looked very unfavourable and threatening, and doubts were expressed whether the contingent from Dorchester, who had a drive of 7—8 miles to reach the place of meeting, would arrive. However, the day improved as it wore on and by luncheon time fully 60 persons were numbered in the party, and 30 were present at 7.30 p.m., to hear the Rev. C. H. Mayo's amusing extracts from the Parish Register in the Vicarage Garden at Buckland Newton.

The meeting commenced in the large room of the New Inn by the Secretary reading, with a view to giving a sketch of the history and antiquities of Cerne, a resumé, drawn from Hutchins' History of Dorset, and other sources. Since Hutchins' History can be easily consulted, it is needless to refer to more than one or two points here. Cerne derives its name from the river on which it stands—the Char—which gives its name to Charlminster, Nether Cerne, and Minterne (Monk Cerne). The history of Cerne is naturally bound up with the Abbey, which originally existed here. William of Malmesbury states that the Abbey was originally founded by St. Augustine, but it is very doubtful if St. Augustine ever went so far west as Cerne. The more likely account of the foundation of

the Abbey is that it was established in A.D. 870 by Edwald, who, struck by the unhappy fate of his brother, St. Edmund the Martyr, retired here, where he lived a hermit's life and died in 871, many miracles being wrought at his tomb. Of the Conventual Church there remain no vestiges, but it is supposed to have stood east of the Abbey Gatehouse, partly in what is now the Churchyard and partly in the field on the North Side. The Abbey buildings stood at the north part of the town, and extended east towards the foot of the hill. Scarcely any vestiges of it remain. The only remnant is a Mansion House, situated at the N. end of the Market-street, which seems to have been built out of the ruins of the Abbey.

From the New Inn the party proceeded to the Church, where the Rev. H. D. Gundry acted as cicerone. Here Sir T. Baker read extracts from the report of the British Archaeological Association in 1871. The church is supposed to have been erected by the Convent for the use of the town about the middle of the 15th or beginning of the 16th centuries. It is chiefly of Perpendicular architecture, and largely built of Ham Hill stone, with external walls composed of alternate layers of chipped flints and stone. The tower, built in three lofty stages, with octagonal buttresses, and with a figure of the Virgin, holding the infant Saviour, filling a niche in the west front, the entire west front of the Church with its wealth of ornament, and the curious gargoylees on the exterior formed the chief features of architectural interest.

St. Augustine's Well was next visited. Mr. Chisholm Batten remarked that they were standing on what was probably the most ancient object of interest in Cerne. It was probable that the Well was named after a very important person in the history of the Christian Church—St. Augustine, Bishop of Hippo. From here the party proceeded to the ancient Abbey Gateway and Barn. The embattled tower and gate are all that remains of the Abbey of Cerne. It is built of brick and stone with escutcheons bearing arms, 16 in number, placed on the west front. The old Abbey House, with barns, dog kennels, &c., made from the ruins of the Abbey, were burnt in 1740 with the dogs and horses. Here, too, was the Park belonging to the Abbot, and the fine Valley, east of the present house, is still called the Park. Under the south point of the hill are traces of the garden, with walls and posterns, called Beauvoir. The Abbot possessed a Vineyard, which still gives the name to a field; hops, too, were successfully cultivated here. The Barn stands on the S. West of the town, and on the S. side of the river, a magnificent structure, capable still, in 1810 of receiving the produce of 800 acres. It is built of alternate layers of freestone and chipped flints, the flint masonry being of the most beautiful description. Great interest was shown in the

architecture and masonry of Cerne Barn, and a paper was subsequently prepared by Mr. H. J. Moule describing the structure in detail, to which he added a water colour sketch, drawn by himself on the spot. This was read at the Winter Meeting in December at Dorchester, and will be found in the present volume at p. 187.

About 1.30 the party left Cerne in carriages for Ufceerne, passing Trendle Hill, which bears the figure of a giant 180 feet in height, cut in the chalk. The inspection of this was deferred until the proprietor, General Pitt-Rivers, should have undertaken the necessary work of cleaning it. The weather had now quite cleared up, and a bright and pleasant afternoon seemed in prospect. Ufceerne House, the residence of Colonel Mount Batten, was reached at 1.45, where the party were most hospitably entertained at luncheon by their host and hostess. Colonel Batten stated that the vaults and underground chambers, which tradition asserted to have been constructed beneath the house, did not exist, nor did the underground passage, which was said to connect Ufceerne and Cerne Abbey, since the house was not constructed until after the dissolution of the monastery. Sir Robert Mellor, who built Ufceerne, appeared to have been fond of bricks and mortar, for he built three houses in Dorset—namely, Bridehead, Winterborne Came, and Ufceerne. The houses at Bridehead and Came had been restored beyond recognition, but Ufceerne, with exception of a small addition, remained as it was left by Sir Robert Mellor. Inside there was little of structural interest, except an oak chimney piece.

From Ufceerne the route was resumed in the direction of Minterne. The district in this neighbourhood gives some good sections of the Lower Chalk and Chloritic marl, which is very fossiliferous, and has afforded an excellent series of species for various public collections. Owing to the rich soil, resulting from the decomposition of these beds, ferns grow in great profusion in the hedges and steep banks by the roadside; in fact, the district bears rather the aspects of Devonshire scenery than of the Dorsetshire type. Minterne House was reached about 3.15, for which Lord Digby had most kindly granted permission to visit. Within the house the various family portraits and the tapestry room, the tapestry of which was designed from some of the paintings of Teniers, formed the chief subjects of interest. In the grounds the party were conducted by the head gardener to see a fernery which had lately been laid out on an extensive scale along the shady banks of the stream, which forms the upper waters of the Char. During the visit the members assembled under the trees in front of the house, where the Rev. H. E. Ravenhill read a paper on the history of Minterne and its various owners, which will be found at p. 89 of the present volume,

From Minterne the members drove to Buckland Newton by the way of Dogberry, thence turning to the right over the top of Mount Silva. From this point, one of the highest in the neighbourhood on the edge of the chalk escarpment, a magnificent view was obtained over the Vale of Blackmoor lying northwards. As the afternoon had become very clear and bright after the rain of the preceding night the distant points of Ham Hill, Glastonbury Tor, the Mendip Hills and Stourton Tower were plainly visible. Buckland Newton, which lies in the valley on the east side beneath Mount Silva, was reached about six o'clock, and here the party were again most kindly received by the Rev. H. E. Ravenhill, R.D., and Mrs. Ravenhill. Tea was provided in the Vicarage, after which a paper, which had been prepared by the Rev. C. H. Mayo on the old parish register of Buckland Newton, was read by the Rev. H. E. Ravenhill. This paper will be found at p. 97. The party were conducted over the parish church by the Vicar, the Rev. H. E. Ravenhill, R.D., who gave an outline of the history of the building, which is of several dates. The chancel, of great length, is the oldest part of the fabric and was built in the 13th century. The side windows are lancet and Early English with Purbeck marble shafts, capitals, and bases. Two on the north, at the west end of the chancel, remain in their original state. The other north window, at the restoration in 1869, was rebuilt partly with fragments of marble from the south windows and partly with new work. On the south side of the chancel much of the Purbeck marble was gone, and the remainder was so dilapidated that it had to be entirely removed. The work had been carried out in exact harmony with the old windows on the north side. When the Archaeological Institute visited Dorsetshire in 1865 the Early English windows were specially mentioned as an object of interest for the antiquary. They appear to be of about the same date as those of Salisbury Cathedral. The Lay Rectors in 1869 put a new flat roof to the chancel, nearly an exact copy of the old roof. The chancel arch is of Ham Hill stone, of Perpendicular style of architecture, with panelling similar in design to part of Sherborne Abbey. Some of the steps to the rood screen on the north side still remain, while on both sides of the arch are hagioscopes. That on the south side was partially closed till the restoration of the nave in 1878. The north arcade was so dilapidated that it had to be renewed when the new roof was put to the nave. It was rebuilt exactly as before. The south arcade, though out of the perpendicular, has been left untouched. The roof of the nave and north aisle were very decayed and had to be entirely replaced by new work. The old roof of the nave was of waggon shape and pressed too heavily on the arcades, according to the opinion of the late Diocesan

Architect, T. H. Wyatt, Esq. The tower arch of Portland stone and the west widow are of different date from the rest of the building. The porch on the south side is of Tudor date, with a groined roof of Ham Hill stone. The roses in this are in harmony with the decoration of the fine old octagonal font. The oak bench ends and some of the old carved panelling in the nave have, as far as possible, been retained. At the restoration in 1878 traces were discovered of the foundations of an earlier church in the north-west part of the nave. The chancel was restored in 1869 and the nave and aisles in 1878. The exterior of the church early in this century was covered with stucco to protect the walls of chalk rubble from the driving weather to which they are exposed. [For the above particulars, which will be found to supplement those given in Hutchins, I am indebted to the Rev. H. E. Ravenhill.—ED.]

The party broke up at 7.30 p.m., and it was nine o'clock before Dorchester was reached. The day, which began so unpropitiously, proved to be one of the longest and pleasantest in the records of the Field Club.

A MEETING was held on Wednesday, July 25th, at Wimborne. The weather was extremely wet and windy, and matters did not look at all hopeful for the carrying out of a successful meeting; however, a party of about 50 were present during the larger part of the day, and, as much of the programme had by a fortunate coincidence been arranged to be carried out under cover, the rain did not cause so much inconvenience as it would on other occasions. The party assembled in a tent, which had been erected in the garden of Mr. W. J. Fletcher, where the President, after formally opening the meeting, proceeded to the description of a cranium of *Bos primigenius*, which was exhibited by the owner, Mr. W. J. Fletcher. This fine specimen had been discovered some three years previously during the erection of a new bridge across the river Stour, in the parish of West Stour, in the Vale of Blackmoor. Whilst digging for the purpose of laying the foundations for the pier of the bridge the workmen came to a hole in the river bed, which was filled with trunks and branches of trees, waterlogged and apparently of great age. Amongst these, and particularly at the bottom, were numbers of bones, most of which had been destroyed previous to examination, but Mr. Fletcher had succeeded in rescuing the cranium at present under discussion. The President's paper, together with a woodcut of the cranium, is printed in full at p. 81 of this volume. Subsequently Mr. Fletcher most generously presented the specimen to the County Museum at Dorchester, where it is now preserved,

Wimborne Minster was then visited. As the Society had, on a previous occasion, spent some time on the consideration of the architectural features of the fabric as a whole, it was proposed to deal only at this meeting with the architecture of the Lantern Tower, on which an address was delivered by Mr. W. J. Fletcher, the subject of which will be found at p. 142 of this volume. He subsequently stated that the tower fell in 1608, owing, no doubt, to the arches in the side aisle being taken away. At that time the aisles were merely used for the purposes of procession by the choir and monks, but when the Church was altered in the Decorated Period the aisles were also altered to make more room, as at present. To do this the aisle arches were taken away, and this, no doubt, weakened the tower, and was the cause of its falling. It fell to the east.

The Rev. Vosper Thomas then read a Paper on "The Ancient Library of the Minster." He said the Library of the Minster was of some interest, not merely as a storehouse for valuable literature of the period, but as an example of one of the earliest attempts at popularising knowledge. It was formed as early as 1686 for the free use of the inhabitants of the town of Wimborne. It was founded by the Rev. William Stone, formerly principal of New Inn Hall, Oxford, and one of the three ministers and officials of the Royal Peculiar of Wimborne Minster. By his will, dated May 12, 1685, he gave certain lands for augmenting the income of the hospital of St. Margaret's, and also a large collection of books, which were placed in the Treasury, a room which is now known as the Library. The books were brought from Oxford in 1686 under the care of the Rev. Richard Lloyd, master of the Free Grammar School. The books consisted chiefly of the Fathers and other works of divinity, and several additions had been made to Mr. Stone's collection. In July, 1725, the library was catalogued, and on the shelves were found 200 separate works. In 1863 a new catalogue was made, and the library was then found to contain 185 works, and, since ten of these were not in the former catalogue, it is evident that some 25 works were lost in the interval. The single MS. in the library bears the date of 1343. From the latter catalogue it appears that the books were nearly all printed between 1520 and 1710. The principal donors were the Rev. T. Ansty, 1697, one of the principal presbyters or ministers appointed in 1661, and the Rev. Samuel Coneul. At the so-called Restoration of the Minster the library was rebuilt; and the iron rods on the edges of the shelves were replaced, to which the books were attached to the old chains, as they now appear. There was a good edition of Walton's Polyglot Bible in 7 volumes (1657), a black leather Breeches Bible (1595), a fine copy of Sir

Walter Raleigh's History of the World (1614). In this treasury room the churchwardens' books and papers were kept for upwards of 150 years for safe custody. These are of considerable interest, the accounts beginning as early as 1399, and some are written on vellum. For some years past the whole of the churchwardens' accounts, formerly kept here, have been deposited by the church governors' consent in a large chest in the north chancel. In the library are also two old oak chests, belonging to the governors, containing a collection of deeds relating to the property of the Dean and Canons of the Old Collegiate Church, from Henry III. to Henry VIII., also other deeds relating to property in various parts of the country placed here for safe custody. Here also is the original deed, founding a chantry or grammar school at Wimborne Minster, by Richard, Bishop of Winchester; John, Bishop of Rochester; Charles Somerset, Lord of Herbert, knight; Sir John St. John, knight; Henry Homeby, clerk; and Hugh Assheton, clerk; executors of the will of Margaret, Countess of Richmond and Derby, mother of Henry VII. This deed was executed by Thomas Lovell, Henry Marnay, J. St. John, Henry Homeby, Hugh Assheton. Here are ancient copies of the charter of Queen Elizabeth relating to the powers and rights of the governors of the Collegiate Church. In this chest is deposited the charter of Charles I. to the governors of the church, and this is the charter under which the governors now act and derive their power to appoint clergy, choristers, clerk, organist, verger, etc. The accounts of the governors and documents contained in a tin box are also worth perusal.

The charter of Charles I. was exhibited and caused considerable interest. The deed is well executed; but the seal is broken in several pieces. A good seal of Queen Elizabeth in fine preservation was exhibited by the Rev. Vosper Thomas, to whom it belongs.

Mr. Luff stated he could remember when the books lay about the library, covered with dust, and with no care taken of them. This was before the restoration of the library.

The members of the Field Club were most hospitably entertained at luncheon by Mr. and Mrs. W. Fletcher at 1.30, and subsequently a paper was read on "St. Margaret's Chapel" by the Rev. Vosper Thomas, of which the following is the outline:—

At a distance of quarter of a mile from Wimborne on the N.W. stands a very ancient hospital or almshouse, the original foundation being unknown. A small chapel is attached to it, dedicated to God, St. Margaret, and St. Anthony. In this hospital at present only 4 poor men and 4 poor women are maintained. By many curious and ancient deeds,

now in Kingston Lacy muniment room, it appears this hospital was set apart for the relief and support of poor persons afflicted with the leprosy, and was subject, as all such hospitals and lazars houses are, to the hospital of Burton Lazar, in Leicestershire, as that was to the grand hospital at Jerusalem. In the reign of King John, one Hugo de Luigweria gave to the poor of this hospital an acre of land lying on the west of a field called Redcotts, near the hospital, which still belongs to it. In the year 1282 Peter, Bishop of Exeter, gave an indulgence to all who should give any goods towards the support of this hospital. Thus the common tradition of its foundation by John of Gaunt seems to be groundless, since he was not created Duke of Lancaster until 1362. It would seem impossible to discover any settled endowment for this hospital before the 10th of Henry VIII., when, by deed, a proctor was appointed to gather alms for its benefit. Reference was made by the same deed to the bull of Pope Innocent IV. given in 1245, proving the antiquity of the foundation, for it appears from it a building was erected before 1245. Very early a charity was founded in the chapel by one John Redcodd, to which charity several tenements in Wimborne then belonged, and still form part of the endowment. In 35th Henry VI. Margaret, wife of Robert Kemston, gave unto Sir Roger Hill, then priest of the charity, certain vestments, which subsequently reverted to the charity of Thomas de Brembere, dean of the collegiate church, Wimborne. From the books of accounts it seems that the government was, from 1567 to 1683, under the direction of two of the most substantial inhabitants of the parish, chosen annually, styling themselves guardians or wardens of St. Margaret's Hospital, assisted by the constable of the town and the steward of the manor. From that time it has been managed by the steward and lord of the manor, the latter of whom exercised the right of appointing the chaplain and the inmates. In the chapel, before the Reformation, Divine service was performed by priests or chaplains, and only when it fell into decay were the services suspended.

The party thence drove to Canford Manor, where, by the kindness of Lord Wimborne, the house and grounds were opened for the inspection of the Society. Here the pictures, the elaborately carved staircase of walnut wood and of Italian workmanship, and the fine tapestry of the hall, formed the chief features of interest, and are only excelled, perhaps, by the collection of remains brought from Nineveh by Sir Henry Layard. These arrived at Canford about the summer of 1851. They came from two palaces. The lions and the best preserved figures were discovered in the palace of the King Sardanapalus, buried in the mounds of Nimroud on the Tigris. The slabs, which have suffered from fire and are much

cracked, came from Senacherib's palace at Nineveh, and were dug out of the mound Kouyunjik among the ruins of the city. They were floated down the river Tigris on a raft to Busrah, where they were shipped for England, and came round the Cape.

The old kitchen and scullery, stated to have belonged to John of Gaunt, also created much interest. Here the Secretary read a resumé, drawn from "Hutchins' History of Dorset," which gives a detailed account of these buildings and the successive Lords of the Manor. It may be well to mention the following facts in connection with this kitchen :—It appears from Hutchins' account that a little east of the Church stood the seat of the Webbs. It was not very large, and was probably built at different times, with little regularity, out of the ruins of the old house. Adjoining the house on the north was, till 1774, a long range of most ancient buildings, the remains of the seat of the ancient Lords of the Manor. Towards the west end was a large old kitchen, called by the country people John of Gaunt's Kitchen. This building still remains (1868), and is still used for its original purpose in the present mansion. It was made a brewhouse, and had a remarkably large chimney, 18ft. broad and 6½ ft. high, in the crown of the arch. In the earlier edition of Hutchins' it is stated that this ancient house was probably erected by William Montacute, first Earl of Sarum, or his father William.

After leaving Canford House the party walked across to the Parish Church. The architectural characteristics of the building were described in a paper prepared for the occasion and read by the Rev. Sir Talbot Baker, which will be found at p. 146 in this volume. Subsequently the members were entertained at tea in the Rectory by the Rev. J. L. and Mrs. Williams, and this brought the day to a termination.

ON THURSDAY, AUGUST 16TH, a meeting was held at Weymouth, for which a programme had been prepared, which was, perhaps, too varied if anything for the time allotted to it. The party met at the Weymouth Railway Station at 11.45, where brakes and carriages were in readiness to convey them to Preston. Here Mr. T. B. Groves, of Weymouth, read a paper upon the "Roman Pavement," which was discovered here about the year 1852, of which the following is the outline :—

Dorchester, during the Roman occupation of Britain, is supposed to have had connection with the sea by the Port of Clavinio, and it is at the north of this Preston valley that such competent archaeologists as Mr. Charles Warne and Dr. Buckland are disposed to look for its site. The first discoverer of Roman remains in this immediate vicinity was Mr.

Medhurst, an archaeologist of much experience in excavations in the county of Suffolk before settling in Weymouth. He, in 1832, during a particularly dry summer, observed traces which led him to explore Jordan Hill, which resulted in the discovery of a Roman temple, and what was probably a sanatorium with a cemetery attached. This was eventually described by Dr. Buckland in a paper before the Ashmolean Society at Oxford in 1843. The finding of this particular pavement was due to accident. In 1852 Mr. Scutt, the tenant of the farm, in making a straighter course for the stream found traces of ancient occupation. The work of uncovering the pavement, however, was not completed until shortly before the meeting of the British Archaeological Association in 1871. It was then visited by the Association and described by the Rev. Prebendary Baker. The remains were found 3 and 4 feet below the surface, and were of the following dimensions :—The long wall of the building was traced to the length of 65ft. 8in.; the court containing the pavement was 21 feet square, the pavement itself being about 15 feet square. The centre is occupied with a circular ornament with angular enrichments, set in a square with white and black framings. Outside of this is a broad cable-pattern border, then other embellishments, and, finally, outside of all, a repetition on a larger scale of the cable-pattern. Other smaller chambers were discovered paved with larger tesserae. The tesserae vary in size from 1 inch square to $\frac{5}{8}$ inch square. They are of three colours, red, brown, and white. The red are fragments of baked tile. There are abundant indications that the building was destroyed by fire. Little else of importance had been discovered in the neighbourhood. A tradition is current in the neighbourhood that the Romans, on finally quitting Britain, embarked from the shores of Weymouth Bay, and that they brought down with them to the coast a vast amount of treasure, a large part of which they were obliged to bury as they were unable to carry it with them, and this still remains to be discovered.

A discussion ensued. Mr. Groves stated that the roof covering the pavement had been generously provided by Sir Talbot Baker. Lord Eustace Cecil thought the pavement might be older than the time of Constantine. Mr. Moule considered there was nothing to fix the date of the pavement. Mr. Chisholm Batten thought it seemed to belong to Christian times, since there was no trace of heathen mythology—the only example he had seen without. The Rev. Osmond Fisher examined the White and Brown Tesserae and considered they belonged to beds of Purbeck limestone and Kimmeridge shale respectively. Owing to the insufficient protection of the pavement it was resolved to place a wire railing round the pavement to prevent the public from carrying away the

tesseræ. The cost of this was defrayed by the Field Club, aided by special contributions for that purpose.

After leaving the wooden building which encloses the pavement the members of the Field Club walked to visit the Norman Bridge, which had been put in repair at the expense of the Club some three years previously. From here the party drove back to Weymouth, where they were invited to luncheon at the College by the Rev. J. Miller, the Head-Master. Before sitting down to luncheon, however, some time was devoted to the inspection of a series of flint implements and other antiquarian objects, chiefly found in the vicinity, which were exhibited by Messrs. Fuller, Mondey, and Damon. After luncheon the customary toast of "The Queen" was proposed by the President. The President then offered, on the behalf of the members, a hearty vote of thanks to the Rev. J. and Mrs. Miller for their hospitality to them that day. Several new members were elected to the Club.

The Secretary then referred to some methods of business. He said the British Association met on September 5th at Bath, and wished to know whether any one present would be willing to attend the meeting as a delegate of the Dorset Field Club. He then said that Vol. ix. of the "Proceedings" would be ready for circulation in the course of a few days. He regretted that there had been a delay in its publication, but he thought this was almost unavoidable. He gave notice that the September meeting of the Society originally fixed to be held at Shaftesbury had been given up from the lateness of the season and the difficulty of reaching the spot. In its place he proposed that two winter meetings should be held at Dorchester that season instead of one as formerly. He thought he had sufficient materials to furnish two excellent programmes.

Mr. T. B. Groves then presented a paper on "The Recent Encroachment of the Sea in the Vicinity of Weymouth," which was read by Mr. H. Moule. This paper will be found at p. 180 of the present volume, together with the substance of the discussion which followed it.

About 2.30 p.m. the party were driven across Weymouth to the Fleet Coastguard Station. Here they took a path leading down to the shore of the estuary, where boats were waiting to convey them across to the Chesil Beach. The object of the visit to the Chesil Beach was to examine the curious group of plants which grow in this locality, and which were explained by Mr. Mansel-Pleydell, the President.

The following is a list of some of the characteristic plants of the Chesil Beach :—

Triticum caninum, *T. acutum*, *Spergularia marina*, *Anthemis maritima*, *Anthyllis vulneraria*, *Apium graveolens*, *Armeria vulgaris*,

Atriplex Babingtonii, *A. deltoidea*, *A. portulacoides*, *Beta maritima*, *Brassica nigra*, *Bromus mollis*, *Daucus carota*, *Euphorbia Portlandica*, *Festuca gigantea*, *Linum angustifolium*, *Glaux maritima*, *Ononis arvensis*, *Plantago maritima*, *Polygonum Roberti*, *Sagina maritima*, *Silene maritima*, *Triglochin maritimum*.

The Fleet water was re-crossed about 4.30 and a visit was then made to Montevideo, the residence of Mr. and Mrs. N. M. Richardson, who had invited the members to tea. A fine specimen of *Cimoliosaurus richardsonii*, a fossil reptile, discovered by Mr. Richardson in the Oxford clay in the neighbourhood, was exhibited on tables in the garden. The President read a paper describing the chief anatomical features of this specimen, which will be found with an illustration at p. 178 of this volume. Subsequently the fine entomological collections of Mr. Richardson were examined, the cabinets of *Lepidoptera* exciting great interest. This brought the day to a conclusion, as the party had to leave about 6 p.m. for Weymouth Railway Station for their respective trains.

A COMMITTEE MEETING was held in one of the rooms of the County Museum buildings at Dorchester on Wednesday, December 19th. The business consisted principally in drawing up the Table of Contents for the tenth volume of Proceedings, and in considering the advisability of holding a two days' meeting at Bridport during the ensuing summer.

A GENERAL MEETING was held on the same day at twelve o'clock in the Museum, which was well attended. The President was absent and the chair was occupied by the Rev. O. P. Cambridge. Several new members were elected. The paper on "The Extinct Dorsetshire Elephants," by the President, was postponed in his absence.

The Rev. O. P. Cambridge read a Paper on "The National Footpaths Preservation Society." He said if any body of persons was specially interested in keeping up rights of way, in the shape of footpaths and commons it was a Field Club. One object of a Field Club was to increase the love of Nature far beyond the limits of its own membership. This is much aided by the power to traverse the fields, or to go through the wood by the footpath. On these grounds, therefore, as well as the broader ground of a desire to preserve to all the right to go by the footpath, as being not merely the pleasanter but often the shorter way, he ventured to ask the members to give their support to the society. The object of the society was to help people to preserve the right to footpaths, and to give them sound advice, both as to the right, whether existent or not, and as to the mode of proceeding to preserve it. The Society was established about

1884, and now numbered some 400 members. Amongst other supporters it numbered 16 Natural History Societies or Field Clubs. He, therefore, proposed that the Dorset Natural History and Antiquarian Field Club do become a member of the National Footpaths Preservation Society on the annual payment of 10s., and he hoped that some of the members would also join in their individual capacity. Mr. Moule, in seconding the proposition, cited two instances of footpaths which had been closed in the Dorchester neighbourhood within his recollection. The Chairman quoted an instance in his own neighbourhood (Bloxworth). Mr. Groves mentioned instances in the Weymouth district. The motion was then carried.

Mr. Moule read a Paper on "The Abbey Barn at Cerne," which was visited at the meeting held on June 28th. This, with a drawing executed by Mr. Moule to illustrate the excellent flint masonry of the building, will be found at p. 187 of this volume.

The Chairman then read a Paper written by Mr. F. O. P. Cambridge on "A New British Worm," found near Bloxworth during the preceding summer. This will be found at p. 139.

Mr. H. M. Richardson read a Paper giving an account of some of the rarer fish which have been lately taken in the mackerel nets on the Chesil Beach. This Paper will be found at p. 132. A discussion followed, in which Sir Talbot Baker stated that the sturgeon, when taken at the Abbotsbury end of the Chesil Beach, had always been sent to the Earl of Ilchester. The Rev. C. R. Baskett said the Earls of Ilchester had the rights of the beach at Abbotsbury granted to them by the Monastery, otherwise the sturgeon, being Royal fish, would go to the Crown.

Some further discussion subsequently took place on the catalogue of the prehistoric monuments of the county in process of compilation, after which a paper, written by Mr. James Salter, F.R.S., of Basingfield, "On the Armorials of the Savage Family in Bloxworth Church," was read by the Treasurer. This paper will be found at p. 153 of the present volume. The Secretary read a paper on "Orchis mascula," prepared by Mr. E. C. Malan, F.L.S. This paper was written with the view of drawing attention to the value of the careful study of particular species of plants, and was illustrated by a large number of drawings and photographs of various parts of the plant in different stages of growth—*e.g.*, the roots, leaves, flowers, and pollinia. The paper also contained a quantity of Folk-Lore connected with this plant, collected from various sources.

The meeting terminated about 4.30 p.m.

A SECOND WINTER MEETING was held at the County Museum on Wednesday, February 13th. The weather was very cold and wintry and

the attendance consequently small. The first paper on the programme was on "Three Extinct Dorsetshire Elephants," by the President, and referred chiefly to the discovery of Elephant remains in Dewlish valley during the preceding 18 months. This paper was illustrated by an excellent series of diagrams drawn by Mrs. E. M. Mansel-Pleydell, which were hung round the Museum. The President, during the discussion which ensued, described the character of the deposit in which the remains were discovered and stated his hope to continue the investigation of the deposit during the ensuing summer. Specimens of the curiously polished flints, found in the overlying bed, were exhibited. The paper will be found in full at the commencement of this volume. The Rev. R. P. Murray read a paper on "Notes on Botany (chiefly Geographical)." This led to considerable discussion. The President considered the presence of the plants enumerated in the paper need not be attributed to the migratory route indicated by the author but to other causes. They are all common southern plants, and have a wide geographical range, and belong to a flora which had been pushed down southwards during the Glacial period, at whose close, when a milder climate prevailed and the bed of the North Sea was raised, the Arctic plants retained their hold only on the highlands and mountains, while the previously displaced flora regained possession of the area they had been forced to quit. Many, doubtless, perished, while others survived only in favourable nooks and corners—isolated spots—of which the plants referred to in the paper were examples, as well as many of our own rare plants in the county.

Mr. H. J. Moule read a very interesting paper, entitled "An Old Dorchester Minute Book," given at p. 17. The Rev. O. P. Cambridge, F.R.S., author of the "Spiders of Dorset," read a paper on the new species which had lately been discovered, entitled "New and Rare British Spiders," given at p. 107.

The Secretary then read a long paper, compiled by Mr. J. S. Udal, entitled "Natural History, Folk-speech, and Superstitions of Dorset," given at p. 19. This paper, since its publication, has led to a considerable amount of criticism and discussion, particularly in the pages of the *Dorset County Chronicle*, which space prevents appearing in the present volume. It is to be wished, however, that the additional material, which the original paper has been the cause of bringing to light, may be gathered together and form a compendium to it in our next volume.

This concluded the programme of the day and with it the work of the year,

Donski Dzurad Dzisloj und Tschitwaen Tschitwaen

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RECEIPTS and PAYMENTS for the YEAR ENDING MAY 31st, 1887. Cr.

RECEIPTS.	PAYMENTS.
June 1, 1886—	£ s. d.
Balance from 1885-6	16 0 0
Subscriptions and Arrears for 1886-7	90 12 0
" Spiders of Dorset," eight copies (sold)	9 3 0
" Proceedings" of Club (sold)	10 17 6
	1886.
	June 17.—L. H. Ruegg, balance on account of 1885
	E. Carter, Engraving Plates for Vol. vii.
	Aug. 17.—Minster and Co., Engraving and Printing ditto
	Sept. 15.—T. B. Groves, for Repairs of Old Bridge at Preston
	" 18.—L. H. Ruegg; Printing and Publishing Vol. vii.
	Nov. 5.— <i>Western Chronicle</i> , Printing, &c., Circulars for Meetings in 1886.
	L. H. Ruegg, Binding 40 Copies "Spiders of Dorset"
	1887.
	May 31—Treasurer, Stamps, & Carriage of Vol. viii. to Members
	" Ditto, Incidental Expenses of Meetings to Messrs.
	Hannah, &c., &c.
	Balance in hand
	£126 12 6

GENERAL STATEMENT, MAY 31st, 1887.

Days of Pastoral History and Antiquarian Field Study.

RECEIPTS AND PAYMENTS

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RECEIPTS.	£ s. d.	PAYMENTS.	£ s. d.
Balance from 1887-8 27 15 0	Mintern and Co., Engraving Vol. ix. 13 19 0
Annual Subscriptions and Arrears ...	... 84 5 0	Sime and Co., Printing Vol. ix. Proc. and Author's Copies ...	... 75 10 0
" Ten Years' Subscriptions from Lord Portman, from and including 1888 ...	... 5 0 0	Do, Printing and sending out Notices of Meetings, Advertising, &c., &c., 1887-8 ...	... 11 13 0
Special Subscriptions from several Members for Protection of Roman Pavement at Preston ...	3 7 6	Do, Printing Chart to Reptile Paper in Vol. ix. Stone and Pearce, Wire Guard, &c., over Roman Pavement at Preston ...	4 15 0
From Secretary, Surplus from Meetings at Wim- borne (4s. 6d.) and Weymouth (£1 17s. 6d.) ...	2 2 0	Treasurer, for Stamps and Parcels ...	... 5 8 9
From Sale of "Proceedings" ...	5 6 6	Subscriptions to Footpaths Preservation Society	0 10 6
Ditto "Spiders of Dorset" ...	3 10 0	Balance in hand	15 0 9
	<hr/> 8 16 6		<hr/> £131 6 0

In Vol. ix. the *Balance-sheet* and *General Statement* of 1887-88 was inserted by mistake for those of 1886-87. The latter as well as those for 1888-89, are, therefore, now inserted in the present Vol. (ix). In future each volume will contain the Balance-sheet and General Statement of the Club's Finances for the year immediately preceding.

Dorset Natural History and Antiquarian Field Club.

GENERAL STATEMENT,

MAY 31st, 1889.

Dr.

C.

	£ s. d.	£ s. d.
Balance in favour of Club	158 10 9	Balance from 1888-9
		Arrears of Subscriptions due to January, 1889 ...
		Subscriptions still due for 1889
		94 0 0
		£158 10 9



Note on *Elephas Meridionalis*,

FOUND AT DEWLISH,

WITH A HISTORY OF THE PROBOSCIDIAN FAMILY AND SPECIAL
REFERENCES TO *E. ANTIQUUS* AND *E. PRIMIGENIUS*, WHOSE
REMAINS HAVE ALSO BEEN FOUND IN THIS COUNTY.

By J. C. MANSEL-PLEYDELL, Esq.,
F.L.S., F.G.S.

BEFORE entering into a detailed account of the discovery of Elephantine remains at Dewlish I propose giving a sketch of the Proboscidian family, from its first appearance to the present time. It includes *Deinotherium*, *Mastodon*, and *Elephas*; the two first are extinct, the last constituted several species, of which two only now exist—the Asiatic and the African Elephants.

DEINOTHERIUM.

The career of *Deinotherium* was a short one, limited exclusively to the Miocene age. Great Britain, as far as it is known, was not submerged during that age, and formed part of the Continent, hence the remains of *Deinotherium* have not been met with in these islands. The lower jaw had two powerful tusk-like incisors directed downwards vertically, which were used either in digging up the roots on which it fed, or in mooring itself to the banks of the river it inhabited, for, like the *Hippopotamus*, it was probably

aquatic. The upper jaw had no molars; neither the upper nor lower were provided with canines. The molars were crossed by transverse ridges, somewhat resembling the *Mastodon*. *Deinotherium giganteum* appears to have been the only species.

MASTODON.

This extinct family is represented by seven species, ranging in Europe and Asia, from the Miocene to the Pliocene. In North America its remains occur as late as the Pleistocene. Both the upper and lower jaws of Mastodon are furnished with tusks, those of the lower jaw disappearing in the adult state. It differed from the Elephant in having three molars in use at the same time. The crowns had mammillated boss-like tubercles with transverse ridges standing out in bold relief. In many species of Mastodon there is a true vertical succession, affecting the third or the third and second molars instead of the horizontal forward succession of replacement, as is the case with Elephants. The range of the genus is very extensive; it has been supposed to reach Australia. A fragment of a tusk found near Moreton Bay, Queensland, was described by Sir R. Owen (Proc. Royal Soc., March 30, 1882), the Australian origin of which there is no question.

The true Elephants appeared like the *Deinotherium* and *Mastodon*, in the Miocene age. They are grouped by the late Doctor Falconer under three suborders—Stegodon, Loxodon, and Eu-elephas, of which Stegodon approaches nearest the Mastodon in the mammillary form of the crown-ridges, so much so that if the crown of a molar of Stegodon is denuded of its coat of cement it would be referred to *Mastodon* rather than to *Elephas*. Three of the four species of this genus are restricted to the Miocene formation of India, the fourth, *S. insignis*, survived the Pliocene age of that country.

Loxodon is represented by the living African Elephant. It differs from *Stegodon* in the character of the molars, which are more elevated and the enamel thinner. The European Pliocene, *Elephas meridionalis*, the chief subject of the present memoir,

belongs to this section, *Elephas planifrons*, of the Upper Miocene Sewalik Hill formation of India, and the Post-pliocene pigmy Elephants of Malta, *E. Melitensis*, which was not more than $4\frac{1}{2}$ feet high, and *Elephas Falconeri*, *Busk*, which did not exceed $2\frac{1}{2}$ or 3 feet.

Eu-elephas is represented by the living Indian Elephant. It includes also *E. antiquus* and the Mammoth ; both are of the Pliocene age, and probably appeared during the latter part of it, when the warm temperature of the earlier period had given place to the cold which began then to set in—the precursor of the Glacial Period. The Pliocene beds give no evidence of a true glacial fauna, neither in the alluvial deposits of the valleys of the Po and of the Arno, nor in the corresponding deposits on the northern side of the Alps, the valley of the Rhone, and other parts of Switzerland. The climate was more equable and of a higher temperature than at present ; the flora then was remarkably uniform in France and in Italy. The Pliocene flora of Lyons, of the Cantal in France, of Bologna, and Tuscany in Italy, connects the past and present plant-life of Europe with those of distant regions, now separated by extensive seas, such as America, the Caucasus, Japan, and China. The Valley of the Po was then an arm of the sea, which stretched into what are now Alpine valleys. The Valley of the Arno was also submerged at this period. In the overlying marine deposits both fauna and flora shew a considerable lowering of the temperature ; immigrants from the north were introduced and largely prevailed towards the end of the Pliocene period, reaching as far southward as Sicily. I expect it was at the later period *Elephas meridionalis*, *Hippopotamus*, and *Rhinoceros Etruscus (leptorhinus)* and *Irish Elk* were driven southwards, and were hardy enough to endure the changes attending the early part of the Glacial Period. As there was then land communication with Africa, some found refuge there, others unable from some cause or other to reach it in time perished. Of the above named animals, as well as *Machairodus latidens*, *Rhinoceros megarhinus*, *Ursus Arvernensis*, *Hippopotamus* is the only one now living, the rest having perished from inability to survive the new state of things. *Elephas meridionalis*

has been traced in the Italian interglacial beds, on the plains of Arezzo, and in the freshwater beds of the Upper Val d'Arno, also in the French interglacial beds of Perrier near Issoire, in the Valley of the Allier, where it is associated with the Mammoth, also in a Pleistocene alluvial deposit in the Valley of the Rhine, between Lyons and Bourg. In England deposits of the Pliocene age occur in the submerged Forest-bed of Norfolk, Suffolk, and Essex, and in the high and low-gravels of the Thames Valley, which contain the same association of Mammalian remains as in the sub-Appenine Pliocenes of the Valleys of the Po and of the Arno. These are overlaid by beds of boulder-clay of the Glacial Period and by superficial gravels of the post-glacial ages. The Crag is the lowest British horizon in which Proboscidian remains have been found—*Mastodon*, *Elephas meridionalis*, *Elephas antiquus*, together with *Hippopotamus* and *Rhinoceros Etruscus* (*leptorhinus*). *Elephas antiquus* has been found at Bracklesham Bay, in the Isle of Wight, and at Pagham Harbour in Suffolk, in mud-deposits, which were evidently laid down when the temperature was moderately high. These are doubtless the oldest Pliocene beds in England, contemporary with the fluviatile beds of Gray's Turrock in Essex.

The probable climatal condition of Europe during the Pliocene age may be inferred from the *Hippopotamus*, whose remains are locally abundant in the beds of that period. It is an amphibious animal, spending the day either floating on, or swimming near the surface of the rivers they inhabit, and roaming at night to feed on and near its bank. Wherever it is now found there is open water all the year round. A frost of twenty-four hours' duration, sufficiently severe to freeze over the lakes or rivers it inhabited, would cause a disastrous annihilation of every *Hippopotamus* thus imprisoned. It appears to have been spread over the whole of the Pliocene area of England in the Valleys of the Severn, the Avon, the Thames, Kirkdale Cave, and Kent's Hole. It has been found at Motcombe in this county. A comparative warm temperature throughout the year may be also inferred by the presence of southern freshwater shells which are now extinct in England.

It is probable that not more than one species of Elephant occupied one district at the same time, and the district must have been extensive. The supply of food they required must have been enormous, and no district could have maintained two species of such large animals, whose habits are gregarious and their food similar ; if we draw an analogy from our own experience at the present day, we find only one species of Elephant, Rhinoceros, Hippopotamus, Camel, Giraffe, Ostrich, or Crocodile, in any one given district. A similar law doubtless existed in geological times. The comparatively meagre flora of the Forest-bed, as determined by Heer, in which the three species of Elephants occur—leads us to a similar conclusion.

ELEPHAS MERIDIONALIS.*

Although a contemporary with *Elephas antiquus* and the Mammoth, it appeared at an earlier period than either. It is designated by Neste as being the most ancient elephant. Until the discovery of its remains at Dewlish it had been only known as occurring in the Forest-bed of the eastern coast. Its European distribution, however, extended through the northern, central, and southern Departments of France, and with the exception of some notifications of it in Northern Italy and South-eastern Europe, there are not any well authenticated records of it elsewhere in Europe. It is found with Mastodon in the Valley of the Arno and in Piedmont, also on the north side of the Alps. In the Pliocene alluvium of St. Prest in France it is the only Elephant ; this is the case in corresponding beds in the Departments of the Gard and of the Herault, and in the sub-volcanic Pliocene alluvium beds of the Auvergne and of Velay, where the Mastodon also occurs, but in a lower horizon. *Elephas meridionalis* exceeded the two other British Elephants both in size and height. It stood 17 feet from the withers, its limbs were enormous, as may be supposed, to enable them to carry such a weighty bulk. Being a Pliocene animal, it

* O. Fisher, "Quarterly Journal of the Geological Society," vol. xliv., p. 818, 1888.

was probably unfurnished with hair. Its molars shew a greater width of crown than any of its congeners; the enamel-plates are thick with wide intervening ridges of cement. The height of the molar is low in comparison to its breadth, the fangs, especially the anterior, one being long and strong. Their discs, when only partially worn down, shew the rings of digitation, in proportion to the amount of wear. The molar belonging to Mr. Kent (here exhibited) had just come into wear, from which an idea may be formed of the appearance of a new unused tooth. The tusks are enormous, commensurate with the rest of the animal; the alveoli in which the tusks were inserted form elongated massive cylinders. They have a slight outward divergence, which is obviously necessary, as otherwise the tusks would interfere with each other had the distal end of the alveoli converged. The osteology of *Elephas meridionalis* agrees in its general character with those of the other two species, although differing materially in size. Both the shoulder and pelvic-girdles of the Dewlish Elephants, which were fortunately entire, corresponded nearly with the dimensions of this species, given by Mr. Leith Adams in his Monograph of British Fossil Elephants. In spite of the care and pains I took to remove the abundant remains from the bed, by applications of hot liquid glue, fish-gluten, thick coatings of plaster of Paris, and strong supports, the disintegrating effects of the impalpable sand, which filled up every osseous cell, neutralised it all; many vanished before our eyes into "dust and ashes."

ELEPHAS ANTIQUUS.

This Elephant also preceded the Mammoth in point of time and was its contemporary as late as postglacial times. It appears not to have had so wide a range; its remains having not been notified from a locality of higher latitude than 54 degrees north, in North Western Europe. It survived the Glacial Period and is found abundantly in Southern Europe, on the south side of the Alps and of the Pyrenees, but it is only on the northern side of these ranges its remains have been found with those of

the Mammoth and *Elephas meridionalis*. It is common in Italy, and has been found in many parts of Sicily and in Piedmont, in the neighbourhood of Rome and Florence, also in Spain and as far south as Gibraltar. It is scarce in France, the Valleys of the Somme and of the Marne only have yielded any of its remains. Some have been obtained from the preglacial beds of the Norfolk and Suffolk coasts, from the more recent river and estuarine beds, and from cavern and fissure deposits. The English quaternary alluviums which cover the boulder-clay in the eastern counties are not rich in remains of *Elephas antiquus*, Mr. John Evans gives a list of the drift-beds in England, and cites one instance only of *Elephas antiquus*, in a bed which does not lie under the boulder-clay. Until Falconer's time this species was supposed to be only a variety of the Mammoth, neither were the two forms of the crowns of its molars—the broad, and the narrow—differentiated by any previous palaeontologist. The lower molars have a slight central expansion of the crown more or less angular, the crimping varies in different teeth as well as in the same tooth, according as the crown has been more or less worn down. Some of the digitations of the plates show disconnected discs as in *Elephas meridionalis*, while the rest have a continuous, unbroken double-edge of enamel.

Professor Boyd Dawkins considers the tusks of *Elephas antiquus* to be nearly straight. Mr. Leith Adams (1881) thought this fact had yet to be identified. This will be referred to further on, where a remarkable double curved tusk very different in shape and bulk to that of *E. meridionalis* is described.*

In an irregular trough or depression of the Purbeck and Upper Portland beds from 20 to 30 feet thick and from 50 to 60 yards wide, extending to a distance from 200 to 300 yards underlain by large waterborne blocks on the surface of the Upper Portland rocks in the eastern part of the Admiralty Quarries, Portland, is a Mammiliferous Drift, composed of red clay or brown, passing into

* See Prof. Prestwich's "Notes on the Phenomena of the Quaternary Period in the Isle of Portland and Around Weymouth." Q.J.G.S., 1875.

coarse loam with angular debris of Portland and Purbeck beds, together with a considerable number of blocks of hard Sarsen stones, underlain by a layer of waterborne rounded pebbles, and in a matrix of sand red-loam, mixed with peroxide of manganese ; the pebbles were perfectly clean and polished surface. In the lower part of the deposit numerous mammalian remains were found, including a large number of teeth of elephants. Mr. Busk identified a well marked molar of *Elephas antiquus* and fragments, apparently of the Mammoth. Another molar, belonging to R. Damon, Esq., F.G.S., is kindly lent to us to-day for exhibition. I had the good fortune to accompany Professor Prestwich during his examination of this interesting deposit.

ELEPHAS PRIMIGENIUS.

The Mammoth.—This, like *E. antiquus*, comes under Doctor Falkner's subgenus, *Eu-Elephas*. It is the most interesting of all the extinct Elephants, owing to its having co-existed with man, as is proved by the implements and utensils of human manufacture found with its remains. M. Mortillet describes the figure of a Mammoth engraved on the beam of a reindeer's horn from Montastruc, near Bruniquel, Department of the Tarn et Garonne, France, which served as the handle of a poignard. Its head is lowered, and the trunk lies perpendicularly between the fore-legs ; the tusks form a support to the blade of the poignard, the tail has a thick, bushy tip, which, as M. Mortillet adds, would be the case of an animal covered as the Mammoth was with hair and wool. The Mammoth stands pre-eminent among its congeners in the wideness of its distribution. Its lighter frame and more pliable constitution rendered it capable of surviving the vicissitudes of climate to which it was subjected, and to which *Elephas meridionalis* and *Elephas antiquus* succumbed. It passed through the whole of the Glacial Period, and of the Elephant family was the only contemporary of man. Its remains are found in the Old World from the extreme North of Siberia to the farthest parts of Western Europe. It has been reported from Portugal, rarely from

Italy, except in the north, near Turin ; it touched the Mediterranean basin at Ventimiglia, the present frontier of France and Italy, and has been reported from the neighbourhood of Rome. It crossed the mountains of Northern Europe, and its remains have been found 70 degrees north latitude, in the Valleys of the Obi, of the Lena, and of the Tenisei. Its absence from Sweden, Finland, and Denmark may be accounted for by a submergence of those countries during the ice-age. A molar, and one only, has been met with in Denmark. Mammoth remains are found in the whole of Central Europe from Great Britain to the Caspian Sea and China. Its remains have been found in North America from Behring's Straits to Texas. It is distinguished from the rest of the family by the plates of the molars being more numerous and narrower, the enamel extremely thin, and scarcely crimped.

Mr. Leith Adams shews that the number of ridges of each tooth, especially those at the posterior end of the series, is subject to every kind of variation, also in the number of plates of which each tooth is composed, but the thickness of the enamel varies so much as to have given rise to a distinction between a thick-plated and a thin-plated variety; the former prevail mostly in Italy, the latter in Siberia and Northern Europe, including the British Isles.

There are many instances on record from Siberia of the soft portions of the Mammoth having been found preserved as fresh as if it had died yesterday. The date of the earliest record is 1692-95. In Lorenz Lange's Travels, 1721, we are told how the Russian prisoners who were banished to Siberia obtained a livelihood by turning snuff-boxes out of Mammoth's teeth. Sangtschof, who wrote in 1887 a description of his journey through Siberia, says the river at Alaseya had washed out of its sandy banks the skeleton of a gigantic animal, apparently about the size of an elephant. It stood in an upright position and retained its skin. In 1806 Adams heard that a Mammoth, with its flesh, skin, and hair intact, had been found on the banks of the Lena, in latitude 70 degrees north, as early as 1801 ; three years after, in 1804, Schumakof, a Tungus chief, took away the tusks and bartered them

for goods to the value of 30 roubles. Adams did not see the remains until 1806. In the meantime the natives had carried off a great part of the flesh to feed their dogs; wild beasts too, had fed upon it, and little more than the skeleton was left; one of the fore-legs had been taken away, the skin of the side on which the body rested was covered with hair, and so heavy it took ten men to drag it on to the banks of the river, which consisted of a continuous and undisturbed bed of gravel intercalated with clay without boulders, supported by a bed consisting of coarse sand containing boulders of various kinds and sizes. I will only name one more instance mentioned by Nordenskiold, who collected fragments of bones and pieces of the hide of a Mammoth at the confluence of the river Mesenken with the Yenesei $71^{\circ}28'$ north in 1876. The hide was an inch thick and nearly tanned by age. It was clear in Nordenskiold's opinion it had been washed out of the tundra-banks; close by it was a very fine cranium of the Musk-ox. In 1887 he found on the banks of a tributary of the Lena 69° north an exceedingly well preserved carcase of a Rhinoceros (*R. Merkii Jaers*). The nearer, he adds, we come to the coast of the Polar Sea the more common are the remains of the Mammoth, and nowhere are they found in such numbers as on the New Siberian Islands. Hedenström, in the space of one verst, saw ten tusks sticking out of the ground. Other animal forms occur on these half explored islands, which must have lived on the plains of Siberia with the Mammoth. As no flesh could remain without decomposition in an unfrozen bed, it is obvious that undecomposed and entire animals found in the Siberian tundras must have been frozen immediately after death, and remained so until extricated from their ice tomb, because exposure to the air through the melting of the ice would have caused decomposition to set in. This was Sir Charles Lyell's view—“It is certain,” he says, “that from the moment when the carcases both of the Mammoth and Rhinoceros were buried in Siberia in latitude 64° and 70° north the soil must have remained frozen and the atmosphere as cold as at this day. It is clear that the ice or

congealed mud in which the bodies of such quadrupeds were enveloped has never once been melted since the day when they perished, so as to allow the free percolation of water through the matrix, for had this been the case the soft part of the animals could not have remained undecomposed." M. D'Archaic, an eminent French geologist, expresses himself in similar terms.

It seems probable that Siberia enjoyed at no very remote period a climate sufficiently mild to afford food for Elephants or Rhinoceros of different species to those of the present day. It is supposed that such large animals would require a luxuriant vegetation for their support, but Darwin shows this to be erroneous. He says: "The southern parts of Africa, though sterile and desert, are remarkable for the number and great bulk of their indigenous quadrupeds." Dr. Andrew Smith saw in one day's march in latitude 24° south, 150 Rhinoceros, several herds of Giraffes, and his party killed in one night eight Hippopotamus. Yet the country was thinly covered with grass and bushes about 4ft. high. Where Mammoth's remains are now found in Siberia, lichens can only grow. Stumps of trees occur on the tundras associated with their roots and dissevered branches, which now grow a few degrees south, and much dwarfed. We are forced to the conclusion, therefore, that the temperature of Siberia was higher then than it is now. The food of this giant animal consisted partly of the leaves of fir, as shewn by their occasional presence in the interstices of their teeth. As yet the contents of the Mammoth's stomach have not, I believe, been examined; the brain, muscles, and tendons are the only portions which have undergone a microscopic examination.

One of the constant characters of the Mammoth's molars of all ages and of all regions, is that the enamel-ridges rise only a very little above the ivory and cement. The alternate successions of enamel, ivory, and cement, are more condensed, and a larger number of plates form the part of the tooth which is in use. Lartel gives from 20 to 24 plates in a molar about $9\frac{1}{2}$ inches long. The number the same length of an Indian Elephant's

molar is not more than 16. The wide geographical range and long duration as to time of the Mammoth, extending from the Tiber 42° north, to the Lena, 70° north, and from Mexico 25° north to Eschscholtz Bay, 66° north, shews a remarkable pliancy and adaptation to changes and varieties of climate. The woolly covering which protected the Siberian form probably disappeared from the bodies of those which haunted the southern homes of the species. The adaptation of the molar crowns for the food supplied by countries wide apart from each other, and not specially adapted more for one region than another, gave them facilities for a survival besides a robust constitution, for want of which the other two species failed.

There are several records of the molars of the Mammoth having been found in this county—at Lyme Regis, Blandford, Encombe, and Portland; also the magnificent scapula, from a gravel bed near the Lidden, which Lord Stalbridge so generously presented to the County Museum last year.

The tusks of the Mammoth have a double spiral curvature, amounting in some cases to three-fourths of a circle, with recurved points. The smaller tusk of the two before us shares some of these characters.

I have dwelt, perhaps, too long upon the general history of this very interesting family, with more special reference to the three British species which have been met with in this county. I now proceed with an account of the Elephantine remains from a remarkable bed reaching over and beyond the summit of a hill overhanging the village of Dewlish, which, with few exceptions, belong to *Elephas meridionalis*. “Hitherto no traces of *Elephas meridionalis* have been discovered on dry land,” so wrote the late Professor Leith Adams in his Monograph on the British Fossil Elephants in 1877; sixty years before these words were written, four molars of this rare species were discovered in this bed. The discovery was attributable to the work of an humble field-mouse in the construction of its winter retreat on the side of this barren hill; the choice was made, perhaps, on account of

its favourable western aspect. The sand scraped out attracted the attention of a passer-by, who was aware of the value of sand in a district in which this material is wholly absent. A facetious friend, referring to the first discoverer of the sand-bed, said "No mouse before this gained such laurels—not *mus ridiculus*, but *mus fossor praeclarus* should be its title." Two of the four molars above referred to are in the possession of Lady Michel; the other two, a lower molar and part of an upper one, are in the Salisbury Museum. These last were described in "The Monthly Magazine" of May, 1814, thus: "Two animals, to all appearance coiled up like a serpent, which fell to pieces when being handled, and other matters which the workmen called hands, somewhat petrified (*fangs of molars?*). It appears like the upper jaw of an animal, the bars of the mouth petrified, but no teeth visible." Doctor Shorto had a clearer view of their value and character than the writer of the above extract, to whom he addressed the following letter:—"I was at Dewlish last week and procured some of the *matters* taken from the pit on the side of the hill. They are the bones of Elephants." The possibility of the occurrence of *Elephas meridionalis* elsewhere in England is hinted at by Doctor Falconer in the case of a molar described and figured by Parkinson in his British Fossil Mammalia from Staffordshire. "Supposing," says he, "Parkinson's record to be exact, it would in no way surprise him if teeth of *Elephas meridionalis* did not turn up among the remains found in the Valley of the Avon."

This remarkable and exceptional Dorsetshire deposit stands above the village of Dewlish at an altitude of 90 feet on the summit of a hill, which spreads out eastward into an undulatory ridge, looking north and south. It is about a mile broad, and forms the watershed of the Milton and Dewlish rivulets; the former being a tributary to the river Stour, the latter to the river Piddle. The face of the hill, as has been already noticed, looks westward, and is extremely steep at an angle of not less than 70°. The river, which flows more than 50 yards from the base of the hill, shews no traces of having at any time filled the valley, there being a

total absence of terraces. After a careful examination of the western side of the valley, which rises less abruptly, and testing several places on the same level as the deposit on the opposite side, I found no traces of it. There was the same bed of hard stubborn clay (*glacial?*), which caps the hill on the western side of the valley, and differing only in being in contact with undisturbed chalk.

SECTION OF THE GRAVEL BED.

1. Mould, about 3 inches.
2. Chalk (rubble), 10 inches.
3. Stiff red clay, 6 inches.
4. Fine impalpable sand and flint (remains of Elephant), 3 feet.
5. Sand and ferruginous gravel (small), 3 inches.
6. Flint material waterborne, 15 inches.
7. Sand and ferruginous gravel (larger than No. 5), 3 inches.
8. Sand (the lower portion with different sized flints), 12 feet.
9. Chalk.

Of these six beds each shews the different conditions under which it was laid down, torrential or placid, only one is fossiliferous, consisting of flints of different sizes and of the finest impalpable quartz sand. The largest flints and bones lie at the bottom, the lighter above, where the sand predominates. Beneath this bed are two others, separated from each other by a thicker bed, containing sand and waterworn flints. The uppermost of the two consist almost entirely of small, thin, flat, shell-like flints, not thicker than a threepenny piece, very much oxydised. The lower one resembles the upper in every respect, except in the size of the flints, which, although larger, retain their flat shell-like character. The carrying powers of the stream were evidently more powerful in one case than in the other. The question which suggests itself is, as to what mechanical agency was employed to sort these light and buoyant flints from the rest of the material borne with them on the current. It would be intelligible if other objects of all shapes and sizes and of equal weight were present, but this is not the case in either of the two beds. Many of the flints in the upper beds of the deposit are

highly polished, apparently by trituration after deposition, as the polish is absent on the surfaces abutting the blocks of chalk, which are interspersed here and there, and which at first sight gives one the idea of the intervention of a fault; they had evidently fallen from the massive chalk as the torrent or invading flood passed over. The preservation of the smaller tusk I attribute to the protection it received from one of these blocks falling across it bridge-like instead of upon it.

The presence of so many Elephantine remains in this limited space goes far to strengthen the idea that they belong to *Elephas meridionalis*, without taking into account the pronounced character of the molars and the tusk which distinguish it from the Mammoth, the limbs and teeth of which, as met with in England, are invariably dissociated and isolated; never found, as in this case, with several of its bones together.

In the year 1883 a labourer of Mr. Kent's found a molar in the sand-pit from which the previous four had been found in 1813. This tooth had not come into use at the time of the animal's death, for the digitations of the plates are scarcely worn and shew their incipient points. Elephants' molars are not displaced vertically like other mammals, but move forward in the jaw horizontally, pushing on the preceding tooth as plate by plate wears out, and at last taking its place in succession. This second *find* stimulated me to examine the pit, and I soon found a humerus of gigantic size. After removing the surrounding flints and sand with considerable care I successfully laid bare the bone, portions of which fell to pieces as soon as touched. In hopes of its preservation by douches of liquid gelatine, and a covering of cement, I left it after carefully protecting it with a covering of sacks and hurdles. An inroad of idlers the next day (Sunday) saved me any further trouble, for on my next visit I was pained to find the sacks and hurdles had been removed and not a vestige of the limb remaining—all was without form and void. The length of the humerus was nearly four feet, its width at the joint furthest from the shoulder—*distal end*—was nine inches. In September, 1887, Mr. Osmond Fisher, who had

seen the two molars in the Salisbury Museum already alluded to labelled *Elephas meridionalis*, visited the locality, and by a fortunate coincidence I was his companion during the limited time at his disposal—about three hours, when he found a portion of a nearly worn down molar. Acting under his advice I continued the search systematically for several days, on the first day I obtained the border and fossa of a massive prescapular, the ridge, spine, and posterior border absent. This fragment, for so it might be called, was three feet six inches long. Close by was another bone, which might have been an ilium ; it had no medullary cavity, its length was one foot nine inches, constricted towards the middle, where its breadth was reduced from one foot one inch at the extremity, to only eight inches and a-half. A diagonal ridge traversed the bone from end to end. All attempts to save these bones were unavailing. The usual consistent adhesiveness of the thin liquid glue application failed to consolidate the bone, for the cells were filled with the impalpable, penetrating sand-grains. The next *find* was a left alveolus, three feet two inches long ; the diameter of the orifice to receive the tusk was five and a-half inches, which corresponded with the diameter of the anterior end of a tusk which was lying near it, its posterior end expanded into a thin, wing-like plate. The remains of other tusks were profusely disseminated in the upper part of the fossiliferous bed.

The following is a list of the remains found in the year 1888 :—

1. A left humerus 4 feet long.
2. A radius 2 feet long.
3. An ulna, length 2 feet 2 inches.
4. An entire scapula with ridge and recurved process.
5. The anterior border and fossa of a scapula 3 feet 6 inches long, and 9 inches from the border to the ridge and spine.
6. The left side of a pelvis, ischium missing ; length of ilium and outer border 3 feet 10 inches.
7. An ischium (?) detached ; length (transverse) 2 feet 2 inches, breath at broadest end 1 foot 1 inch, at most constricted part $8\frac{1}{2}$ inches.

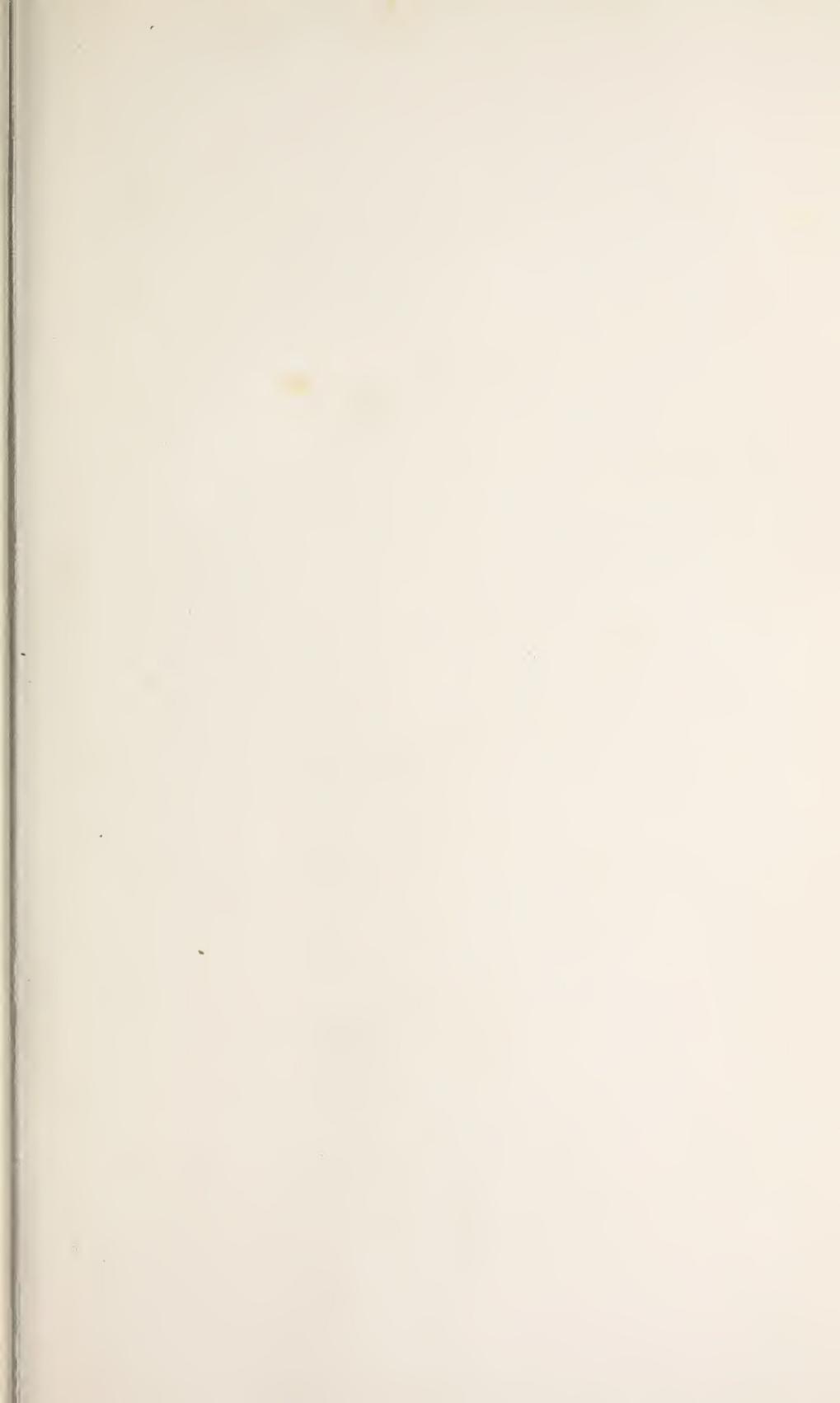
8. A femur, length 2 feet 3 inches.
9. A tibia, length 1 foot 10 inches.
10. The massive left alveolus of an upper jaw, the cavity of which corresponded with a magnificent tusk which lay near it. The orifice for the insertion of the latter was cylindrical and 6 inches in diameter ; the other extremity was somewhat flattened, expanding into a thin, wing-like plate on one side. Dr. Falconer considered the angle which the alveolus makes with the frontal plane affords a mark of distinction between *E. meridionalis* and *E. primigenius*, but unfortunately, owing to its detachment from the tusk, the angle cannot be ascertained. Its length is 3 feet 9 inches.
11. A tusk 6 feet 2 inches long, and 6 inches in diameter at its base. The point, for about 18 inches, rested perpendicularly upon a bed of waterworn flints, mingled with fine quartz-sand. By a bold upward curve the tusk was raised two feet four above the base line, and lay nearly horizontally, at that level in a southerly direction. The posterior end lay within a few inches of the alveolus.
12. A tusk of much larger dimensions, 7 feet 6 inches long, and 2 feet 3 inches in circumference at the base. About 18 inches of the anterior end missing. It was probably in this condition when the superincumbent bed of clay was deposited, as both are in contact. This tusk differs in shape from the preceding ; the curve (which bore its whole weight as it lay in the bed) had an upward and forward direction. Both extremities touched the clay-bed above. The deficient extremity probably had an outward direction.
13. Remains of other tusks were scattered in several parts of the deposit. In some places the fragments of ivory were so numerous as to predominate over the other materials.
14. A molar ; crown in use $4\frac{1}{2}$ inches long, consisting of 6 plates (the anterior missing) ; 6 others unexposed and not in use. Breadth of fourth plate in use $3\frac{3}{4}$ inches, depth $4\frac{1}{2}$ inches.
15. A molar ; crown $7\frac{1}{2}$ inches long, consisting of 10 plates. Breadth of fourth plate $3\frac{1}{2}$ inches ; depth from tenth plate (posterior) to the fang 5 inches.

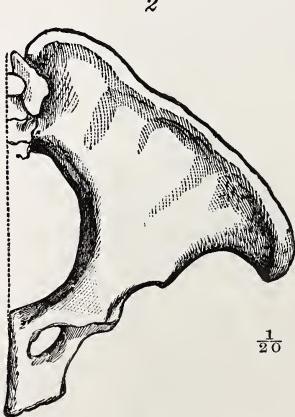
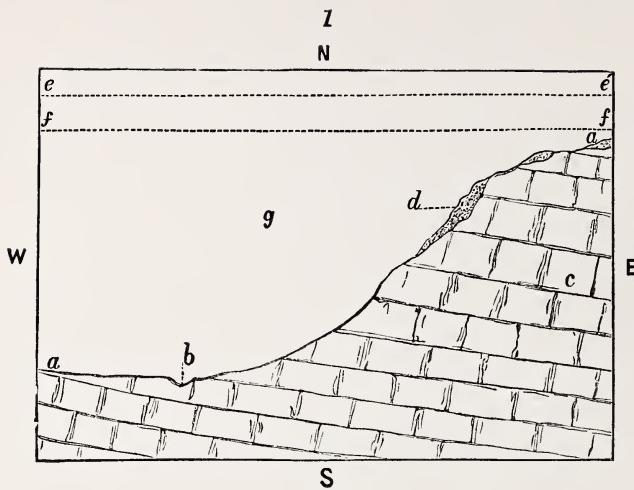
16. Several other molars of *Elephas meridionalis* have been found, the whole number being seven, including three plates and part of the fourth in which the digitations are worn down into continuous ridges.

17. Isolated plates of other molars are scattered in various parts of the deposit.

I am inclined to view the bed as *Pliocene*, deposited immediately upon the Chalk after previous removal of the lower Tertiary beds, (of which there are abundant proofs in the neighbourhood), during one of the many oscillations to which Europe was subject during the Pliocene and Glacial ages. A denudation must have removed the Pliocene bed after its deposition, of which there are no traces left, as far as our present knowledge goes, except in the Dewlish sandpit, which has no connection with the Dewlish river ; the carrying force of the Pliocene stream appears to have come from the north-east, and the deposit laid down before the present features of the district were established. The angular flints of the Dewlish bed are probably derived from the neighbourhood, the sand and quartz pebbles from some distance, the latter from an older bed invaded by the Pliocene flood bearing with it the massive bodies of elephants. The age of the bed will be ascertained with some certainty, if, on further examination next summer, we find remains of other mammalia, molluses, and plants.







CORRIGENDUM.

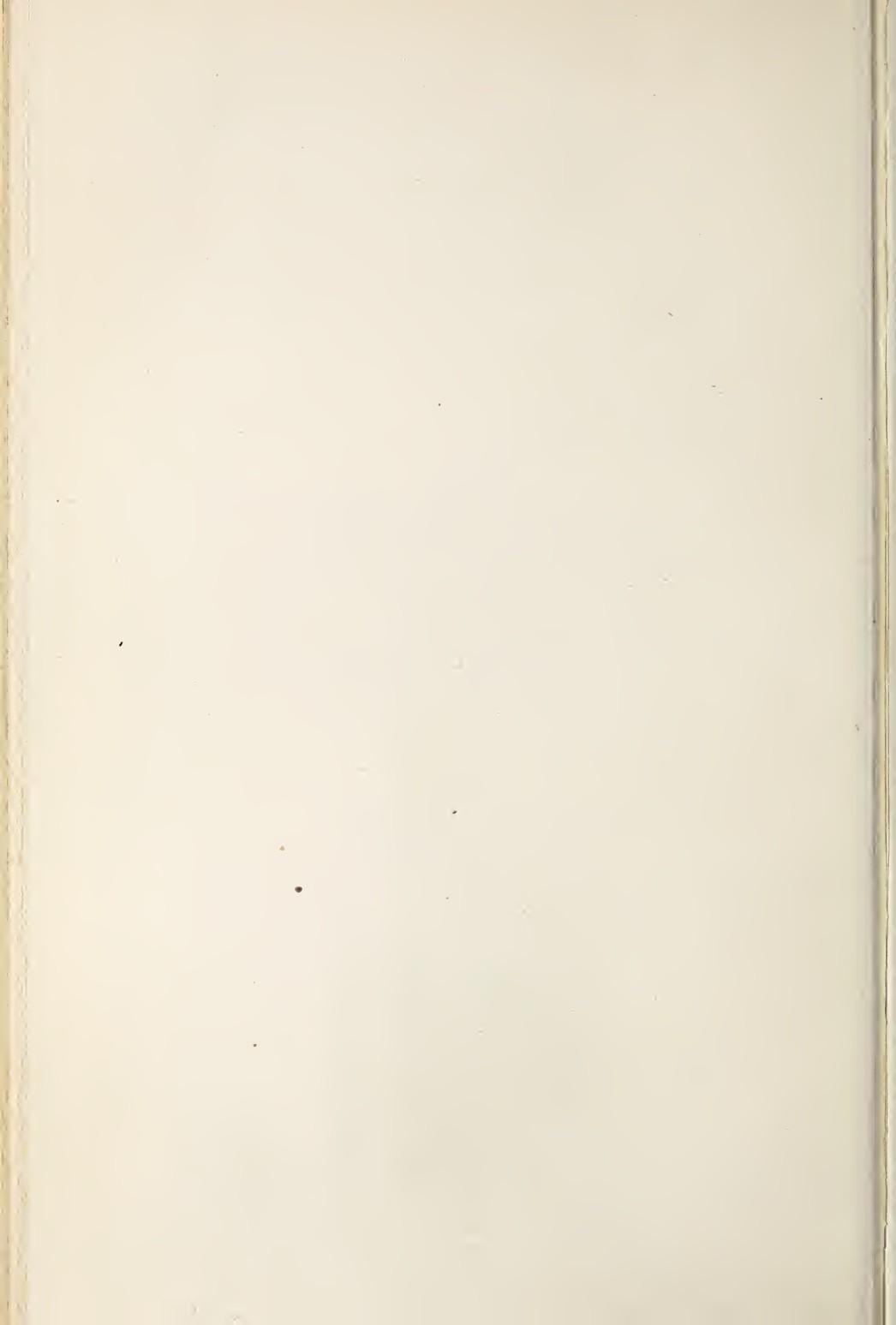
In the explanation of Fig. 1 the “dotted line representing former level of the chalk prior to denudation” should be *ff.*, and the succeeding line *ee*.

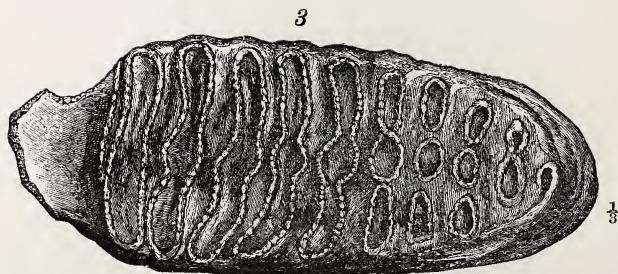
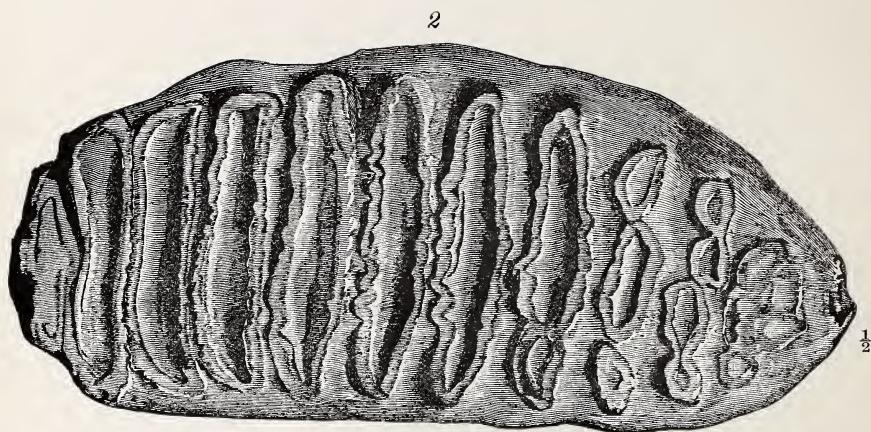
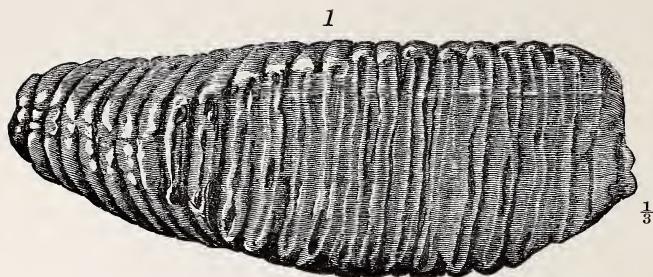
FIG. 1.

- a. A line representing the outline of the valley.
- b. River bed.
- c. Middle chalk, forming the eastern side of the valley.
- d. Elephant bed extending to E.
- ee. Dotted line representing former level (theoretical) of the chalk prior to denudation.
- ff. Probable extension of the Pliocene bed over the chalk.
- g. Dry valley.

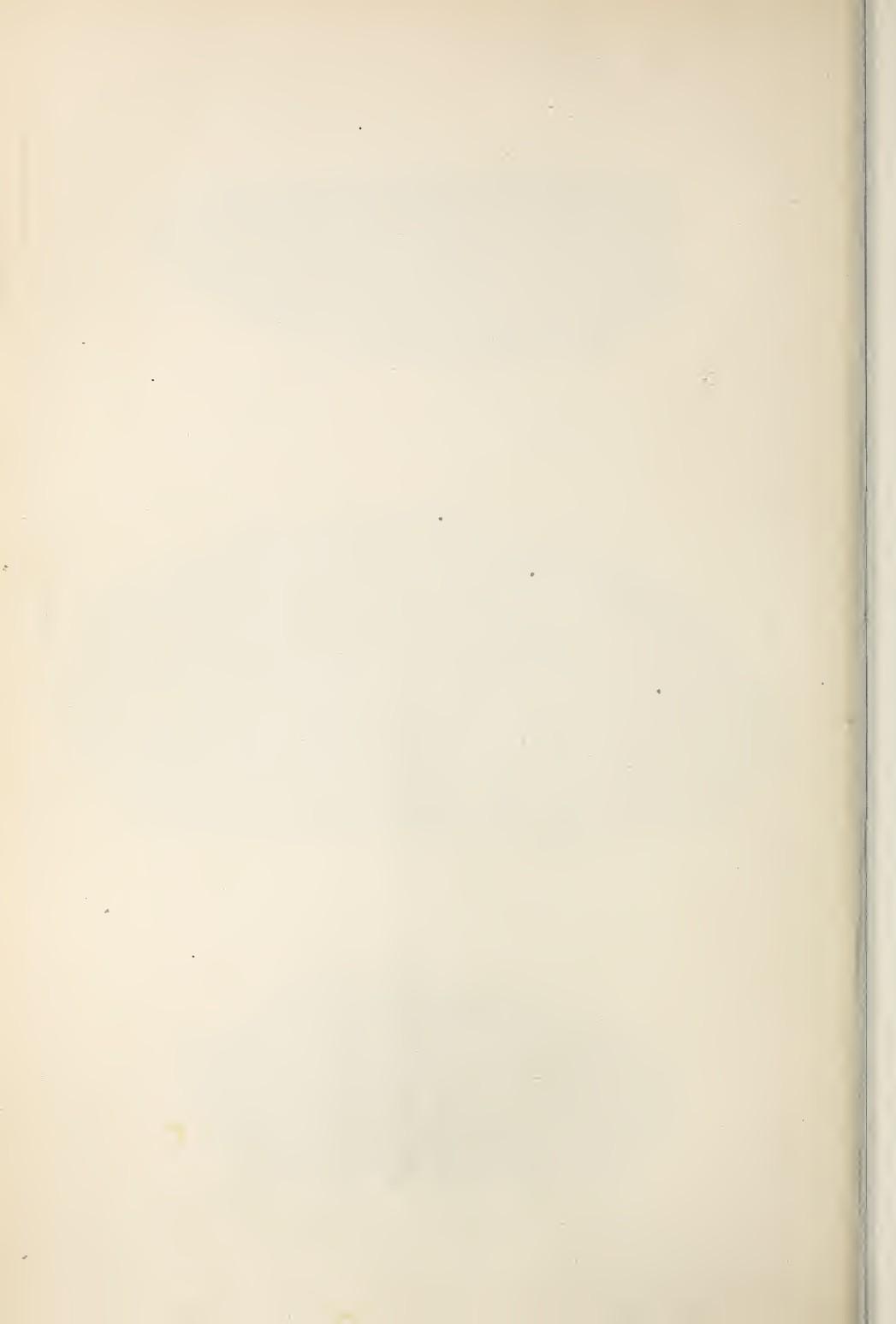
FIG. 2.

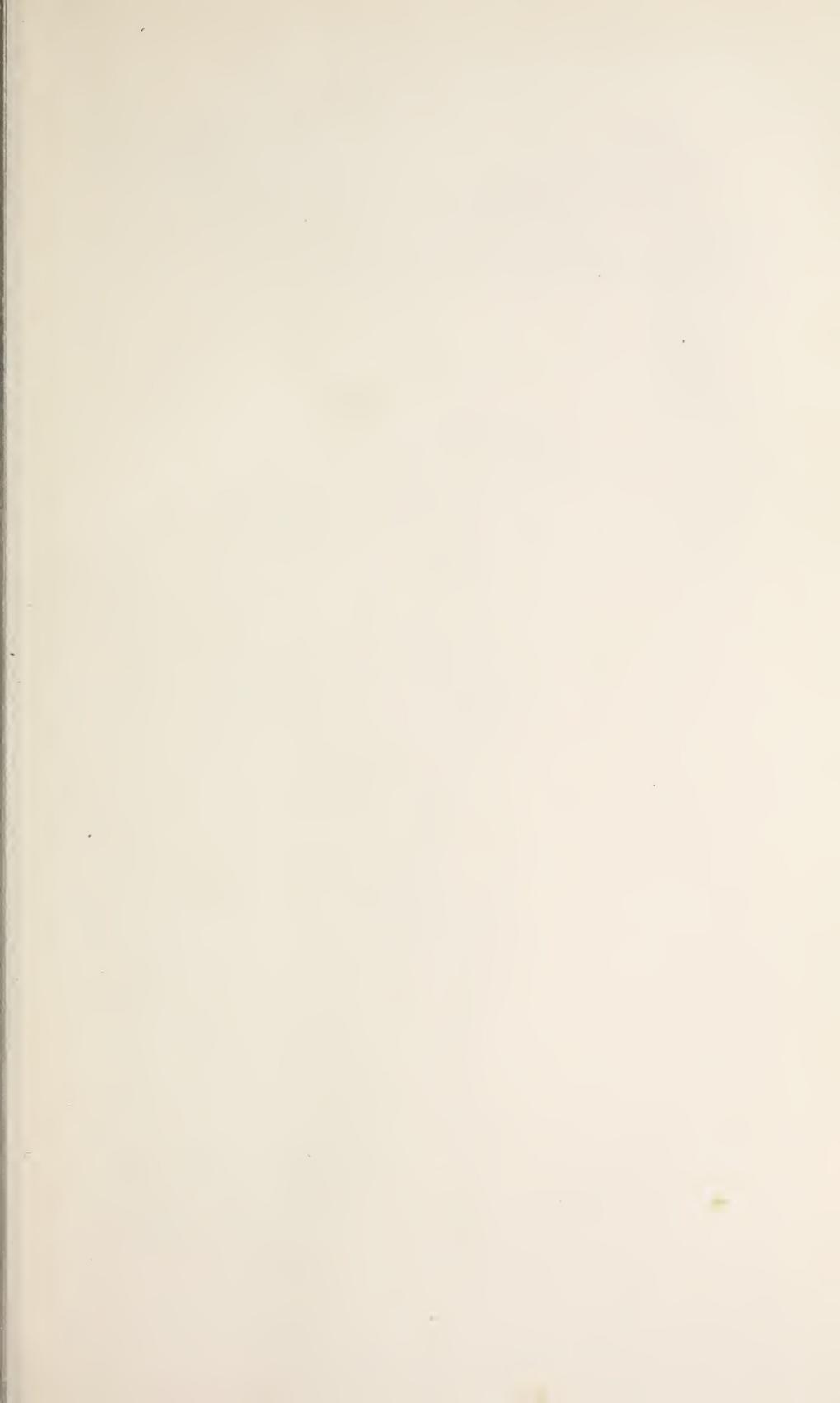
Right half of pelvic of *E. meridionalis*.

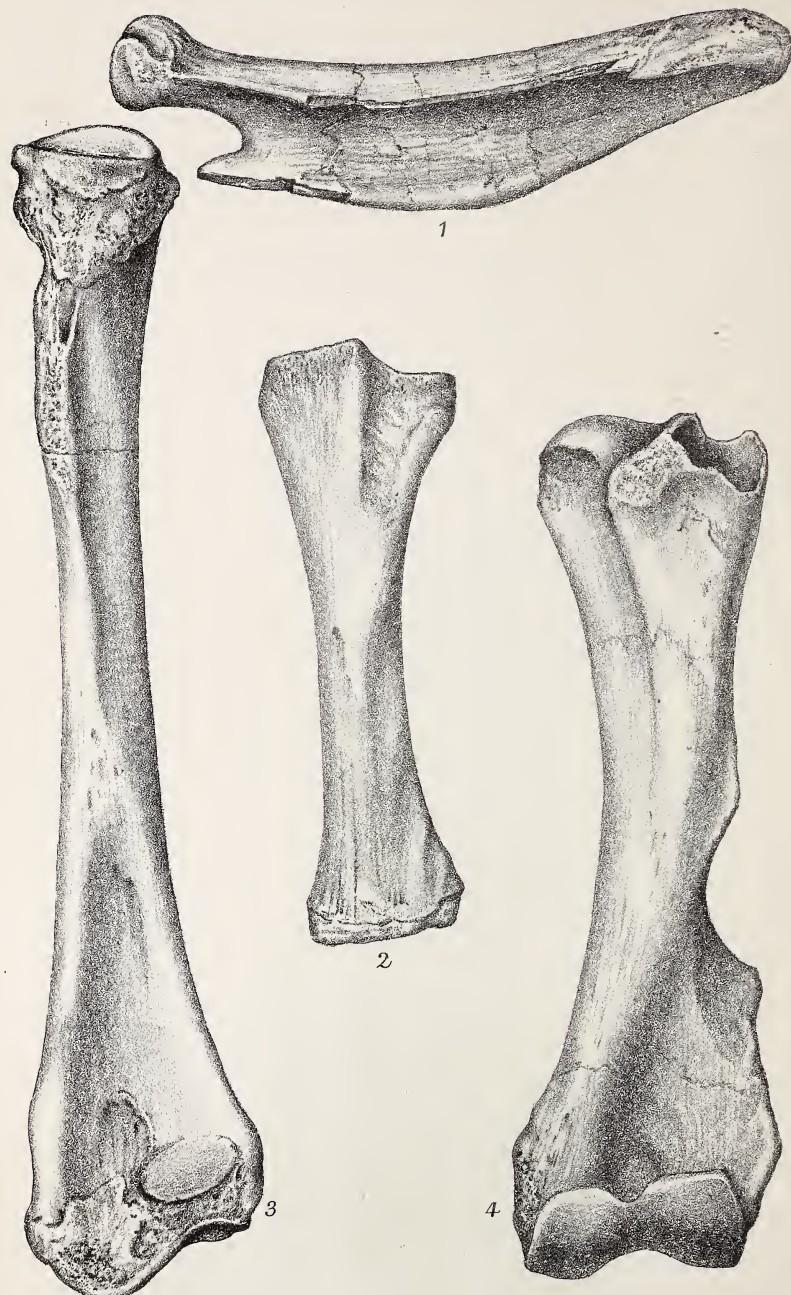




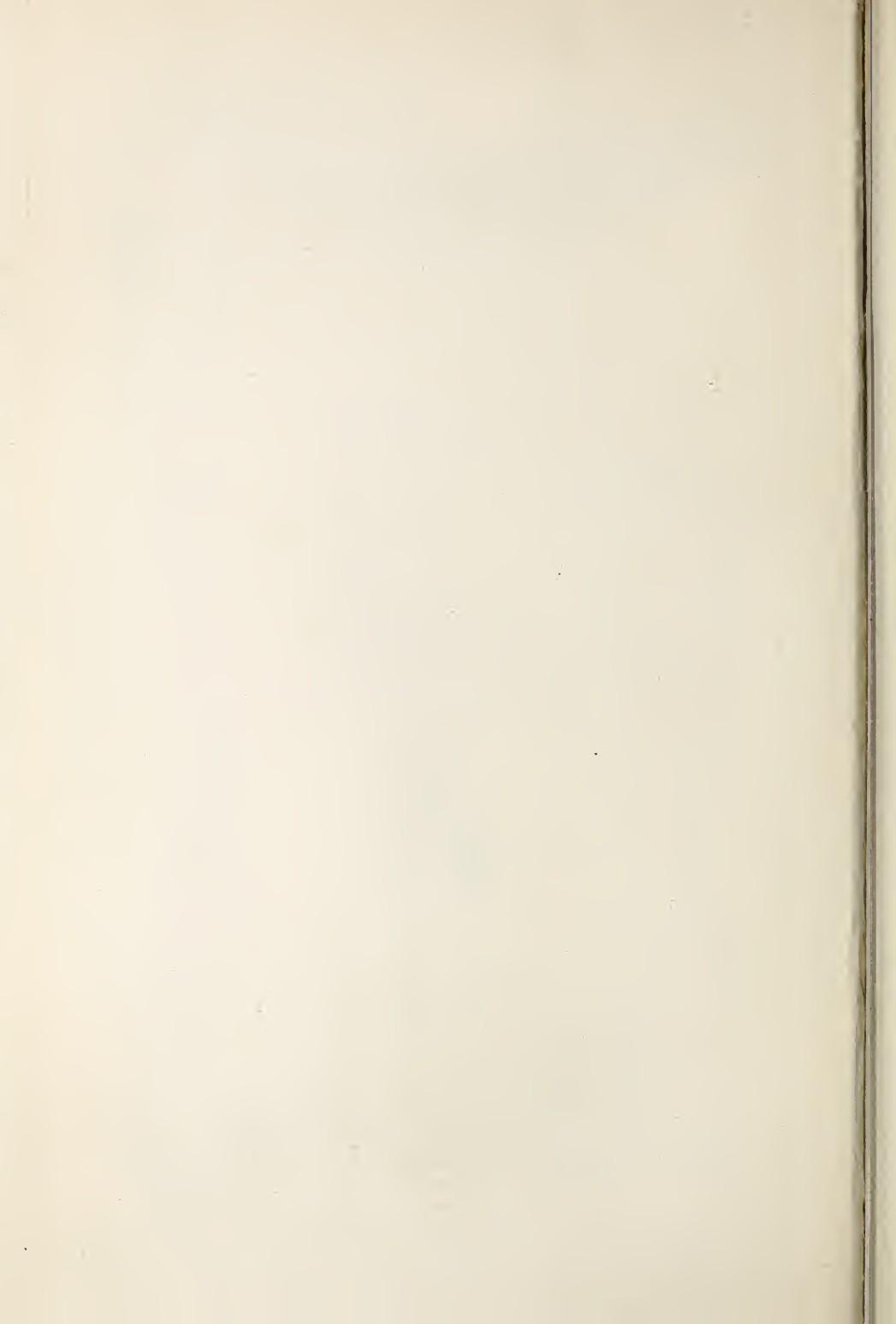
1. *Elephas primigenius.*
2. *Elephas antiquus.*
3. *Elephas meridionalis.*







1. Scapula (one-tenth natural size).
2. Tibia (one-eighth natural size).
3. Radius (one-fourth natural size).
4. Humerus (one-eleventh natural size).





Dorsetshire Folk-speech and Superstitions relating to Natural History.

By J. S. UDAL, F.R. Hist. Soc. ;
(Member of Council of the Folk-lore Society).



OME twelve years ago I sent to the pages of *Notes and Queries* (5th series vii., 45, viii., 44) two lists, containing the names which the country folk of Dorset ascribe to the common natural history objects that we see around us, such as animals, birds, insects, plants, &c. (and which, for want of a better term, I may call *Natural History Folk-speech*), in the hope that other correspondents would do the same for other counties. That hope, however, I am sorry to say, with but one or two trifling exceptions, has not been realised.

Since that time the Folk-Lore Society, founded in 1878, has supplied a decided want in enabling folk-lorists to chronicle in the pages of its *Record* and its *Journal* those special items appertaining to the study of Folk-lore which might have been lost or overlooked in the wider and more cosmopolitan columns of *Notes and Queries*.

I do not think that the *Proceedings* of the *Dorset Natural History and Antiquarian Field Club* have contained much in the way of folk-lore, with the exception, if I remember rightly, of a paper on "Sorcery and Witchcraft" from the ever vigorous pen of the President of the Society, which is to be found in Vol. V.

This is, perhaps, not to be wondered at when we consider its constitution, and the objects more especially for which the Society was formed. Nor could it, amongst the more solid and valuable articles that have filled its pages, well have found place for those isolated scraps of folk-lore which I would venture to suggest are so pre-eminently suited for the pages of that new aspirant for our favour and support, the *Somerset and Dorset Notes and Queries*, a periodical which, from its artistic merits and interesting contents, has already received a hearty welcome and support from many members of our own society. There seems to be no reason, however, why the *Dorset Field Club* should not include in its "Proceedings" articles on the subject of folk-lore of a greater length and a more solid character, perhaps, than are suited for the pages of its younger contemporary ; and it is with that object, and in the hope that my example may be followed by others, that I have compiled the following paper, which appeals both to the natural history and to the antiquarian side of my readers.

I may say at once that it would be impossible in contributions of this nature, not to find that certain words and expressions, though considered at first as peculiar to one, appertain in reality to several counties ; for the boundaries of our country folk-speech know no geographical limits. Were only such words to be inserted that are shown upon inspection to belong to one individual county and no other, a vast number of undoubted provincialisms would be unchronicled altogether, and the loss to the student of comparative folk-lore would in consequence be very great.

Again, if this is to be done at all, it must be done soon, or it will be too late. Year by year, under the civilising influence of compulsory education and the unsympathetic attitude of the Board Schools, our country folk are becoming, if not ashamed—at least more shy—of confessing to those popular superstitions and quaint old customs that once awed and delighted our ancestors ; and it would not be difficult, I think, to prophesy that before many years have passed the antiquary and the lover of folklore alike may look in vain for the survival amongst us of

aught that appertains to superstition, legend, or custom. The harvest has long been ready to hand, and it only remains for us to gather it in ; there will be no seed for any future harvest, of that we may be sure. In the hope, then, as I have said, that my example may be followed by folk-lorists of other counties, I now append a list of Natural History Folk-speech from a Dorsetshire source, for the compilation of which I am principally indebted to the late Rev. W. Barnes's *Glossary of the Dorset Dialect*, published for the Philological Society in 1863, and his recent additions to it published from time to time in the *Dorset County Chronicle*, and which have doubtless found their way into the last edition of the *Glossary* that was published just before the death of the Dorset poet in 1886 ; the late Mr. Pulman's *Book of the Axe* ; and other more private sources, including my own collection of words. To this I have added an account of any superstitions (from a Dorsetshire source) that may be known to bear reference to any object of natural history contained in the subjoined list of provincialisms, together with those which concern other objects of natural history whose local names I have not yet been able to gather. This arrangement, though, perhaps, not one to be approved of by the scientists of the Folk-lore Society, will, nevertheless, I trust, commend itself to the possibly less exacting members of the *Dorset Natural History and Antiquarian Field Club*, if only for the advantage it will afford with regard to simplicity of reference.

I may, perhaps, call the attention of those of our readers who may be meditating a contribution from a Somersetshire source, to a list of words in the dialect of that county published in *Notes and Queries* (5th series, viii., 358), in which several of the names there given belong also to Dorset. This may only be expected, perhaps, from two counties that not only are contiguous but whose dialect would appear to bear more resemblance to each other than either of the neighbouring counties of Devon and Cornwall.*

* I would take this opportunity, if I may be allowed, to appeal to all those who are interested in the subject of Dorsetshire folk-lore for contributions, either by way of addition to the particular subject of this paper, or generally with reference to any superstitions, legends, or customs,

Adder :—It is said that if any animal or man has been bitten by an adder the best remedy that can be used is the fat taken from the adder that has caused the injury. There seems to be a fancy that the pest that has caused the injury contains in itself also the remedy.

If you dream of adders or snakes it is a sign that you have enemies who are trying to do you some secret mischief ; the same meaning is attached to dreaming of bees and wasps.

Air-mouse :—The bat (see *Rere-mouse*).

Aller :—The alder tree (*alnus glutinosa*.)

Ash-candles :—The seed vessels of the ash tree. The properties of the ash, whether for the purposes of charms or divinations are widely known.

In Dorset the belief was widespread that if a young maiden ash (*i.e.*, not pollarded) were split and a ruptured child drawn through it, the latter would become cured. The late Mr. Barnes stated that he had known of two trees through which children had been so drawn. [See Gilbert White's *Natural History and Antiquities of Selborne* as to this.]

Some people, believing the ash to be dioecious (that is to say, the male and female flowers were found on different trees), select what they suppose to be a female ash for a male patient and *vice versa*. But I have the authority of our worthy President for saying that although some members of the ash family are dioecious, it is not the case with the common ash, which is undoubtedly polygamous. Further, as the tree to be selected must be a sapling, and therefore not old enough to bear fruit, its sex, if different, could not be ascertained.

The ash is also considered as throwing some light upon the probable success or otherwise of the corn crops, as the following couplet would tend to show :

“ As ash do coaly
Wheat do lowly.”

that obtain in the county. Any such assistance would be particularly valuable to me in my contemplated work on *Dorsetshire Folk-lore*, and would be most gratefully received.

That is, as the bud of the ash blackens, so in proportion will the wheat be light or heavy in ear.

The ash, in conjunction with the oak (which see *post*), is a very favourite test, according as one or the other is the first to put forth its leaves, as to what kind of weather may be expected during the ensuing season :

“ If the ash is before the oak,
Then there'll be a very great smoke ;
If the oak is before the ash,
Then there'll be a very great splash.”

And variants of this are common. The use of ash twigs, in place of hazel, as “ divining rods ” for purposes of finding water, is not unknown.

Asker :—The water eft or newt.

Bammy :—A new-born lamb.

Barley-bird :—The wry-neck.

Barrow-pig :—A hog ; not a sow.

Bœacon-weed :—The plant goose-foot (*chenopodium*.)

Beary :—A wild boar.

Bedwine :—The traveller's joy (*clematis vitalba*).

Beetle-head (*Bweitle-head*) :—The bull-head, or miller's thumb ; bunch-head (*cottus gobio*). Also the tadpole.

Bennets :—The stems and flower-head of grass (*agrostis*).

Bindle (*Bittle*) :—A beetle : the tool.

It is commonly supposed that if you kill a black-beetle (or a fly) twenty of them will come to the funeral. No doubt this belief may be attributed to the fact that no matter how many blackbeetles or flies you may destroy there is apparently no diminution whatever in their numbers.

Billy :—(i.) a bull (ii.) a bundle (fr. billet).

A bullock's heart was a favourite charm in Dorset for warding off the malignant influence of witches. A few years ago, upon a house at Hawkchurch being vacated by its tenant, an obstruction was found in one of the chimneys, which, on being removed, was found to consist of a bullock's heart, into which was stuck a quantity of

the prickles of the white thorn, some nails, pins, and other things. The object of the obstruction was considered to have been to prevent the access of witches to the house by means of the chimney! The same precaution is sometimes used to keep fairies out.

Bird :—If a bird, and more particularly if a robin, happens to come into a house, it is looked upon as an omen of death—a sign that some one in that house will shortly die. A bird tapping at the window is a very ominous sign.

Bird-pears :—Haws ; the fruit of the hawthorn. (See *Hails*).

Bird's-eyes :—The flowers of the speedwell (*veronica chamœdrys*).

Black Bob :—The cockroach (*blatta orientalis*).

Black Jack :—The caterpillar of the turnip-fly (*athalia spinarum*).

Bloody-warriors :—The garden wall-flower, so called from the blood-like tinges on its corolla (*cheiranthus cheiri*).

Blower :—The black pollack.

Botherum :—The yellow ox-eye ; corn marigold (*chrysanthemum segetum*.)

Boy's love :—The herb southernwood * (*artemisia abrotanum*).

Box :—If a sprig of box *in flower* be brought indoors, death will soon cross the threshold.

Broad-grass :—The common red clover (*trifolium pratense*).

Broad-weed :—The cow parsnip.

Brown-shell-nut :—A kind of brown-rinded apple.

Bryanstone-Buck :—The stag-beetle (*lucanus cervus*), so called from being often found in the neighbourhood of Bryanston.

Bumble-Bunnen :—A sea-fish ; the smaller kind of conner.

Butter-and-eggs :—The yellow toad-flax ; so called from the yellow and white of its corolla (*linaria vulgaris*). See *Eggs-and-bacon*.

Butter-daisy :—The great white ox-eye (*chrysanthemum leucanthemum*).

Button (Button-crawler) :—The wood-louse.

Cammick :—The plant restarrow (*ononis arvensis*).

* It is somewhat curious that this herb is called “old man” in several other counties.

Cat :—A cat that is born in May is generally said to bring snakes into the house.

If you want your cat to be a good “mouser” you should get some one to *give* you one ; a cat that is *bought* is never good for much.

Cattle :—If cattle during wet and miserable weather are seen feeding at the top of a hill, it is considered to be a sign that the weather will soon clear up.

Cavings :—The husks of barley.

Cax-head :—The dry head of the wild carrot or other umbel (see *Kecks*).

Cheat :—Wild oats, or oats which, from lack of soil or food, or other cause, have degenerated into the wild form. The bearded darnell (*lолium temulentum*).

J. E. Taylor in *Half-hours in the Green Lanes* (4th ed : 1877, p. 275), says that the bearded darnel (*lолium temulentum*), so called from its long awns, is supposed by some writers to be the “tares” to which the Saviour alluded in His parable of the tares and wheat. The seeds of this species have a very peculiar intoxicating effect.

When malted with barley the ale produced from the mixture produces speedy drunkenness, and if they are ground up with bread corn, the bread, if eaten hot, produces a similar effect. Smith in his *Bible Plants* states that even death has been caused by eating bread containing darnel. Its poisonous properties were well known to Theophrastus and other Greek writers, and Gerard, in his *Herbal*, says “The bread wherein darnel is, eaten hot, causeth drunkenness ;” hence in some books it is called “drunken darnell.” It is also said to cause blindness. The attribution of poisonous properties to the bearded darnel is not mere folk-lore. Linnæus says that the seeds baked in bread are hurtful, and, if malted with barley, produce giddiness. Bentley suggests that this may be due to the seeds becoming ergotized, as the effects described closely resemble those of the common ergot. (Upon this subject see *Notes and Queries*, 7th s., vii., 46, 198).

Cheese-eater :—The tomtit ; so called from its cry.

Cheeses :—The inner shell or pod of the mallow; so called by children who eat them, and liken them to a miniature “blue vinny.”

Cheffon : The chaffinch.

Chibble (Chibbol) :—A young onion (Marshwood).

Cleden (Clydern) :—Goose-grass (*galium aparine*) ; called also cleavers, clavers, or clivers, from their cleaving to anything.

Clock :—A door-beetle ; a clinger.

Clote :—The yellow water-lily (*nuphar lutea*).

Cock :—A cock crowing at the door is a sign of coming visitors. If a cock crows in the afternoon, according to some, it foretells a death in the family of its owner, or as others say, it signifies that sickness in the place will shortly follow. An old woman once said : “If the cock crows after twelve o’clock noon her is doing it to bring I bad news, or John may be bad ageän. I can’t a-bear to hear ’en.”

Cockle (cuckle) : The burr of the burdock (*arctium lappa*). (See *Cookoo*.)

Collie :—The blackbird.

Colt :—It is generally believed that colts born in May have an awkward trick of lying down in water as you ride through.

*Comfrey (*sympphytum officinale*)* :—“Is a capital cure, but I don’t know what for or in what form. A salve, I think (presumably for sores), but you must take care to use the red-flowered sort for men and the white for women.” (Mr. H. J. Moule, in the *Folk-lore Journal*, vol. vi., p. 116, and *Conf.* Black’s *Folk Medicine*, pp. 108 et seq.)

Conners :—Ground-fish ; rife by shores with a rocky bottom.

Conker :—The ripe fruit of the wild rose ; the single or “canker” rose.

Cooch :—Couch-grass, quitch-grass ; creeping wheat grass (*triticum repens*).

Copse (cops) :—A thick head of sprouts or shoots or tufts of grass.

Cornish Jack :—The Cornish chough (*corvus graculus*).

Cows-and-Calves :—Lords and ladies ; the barren and fertile flowers of the cuckoo-pint (*arum maculatum*).

Cow-white :—A customary payment in lieu of tithe-milk of a cow, is called in some parts of West Dorset “cow-white money,” or simply “cow-white.” (Hutchins, 2nd Ed., 1796).

Crannick :—A root of furze or stool of a furze bush.

Crewel :—The cowslip (*primula veris*).

Christen :—A small kind of plum.

Crow-garlic :—*Allium vineale*.

Crow-shell :—The fresh-water mussel shell (*unio*), so called because the crows take them from the water, and, having eaten their contents, leave them in the meadows.

Crumplen :—A small apple, crumpled from defective or constrained growth.

Cuckoo :—The wild burr and burdock (*arctium lappa*). (See *Cockle*.)

Cuckoo-flower :—The lady’s-smock or bitter-cress (*cardamine pratensis*), on which cuckoo-spittle is often found.

Cuckoo-spittle :—The frothy nidus of the *cicada spumaria*, attributed to the spitting of the cuckoo.

Cuckoo’s-bread :—Wood-sorrel (*oxalis acetosella*).

Culver :—The wood-pigeon or ring-dove.

In connection with pigeons may be mentioned the common superstition, by no means confined to Dorset, that pigeons’ feathers should always be thrown away, and never on any account used for stuffing beds or pillows, for it is believed that persons cannot die peacefully if lying upon them. This accounts for the not uncommon occurrence in olden time of a poor lingering mortal being lifted on to the floor in order that he may not die so hard !*

Apropos of a person dying hard, it was sometimes the practice in the neighbourhood of Whatecombe for those in attendance on the dying person to observe which way the planks of the floor lay, and

* It is, moreover, a Hindoo and Mahomedan custom to lay a dying man on the floor. *Conf. Henderson’s Folk-lore of the Northern Counties*, p. 60, and *Gregor’s Folk-lore of North-east of Scotland*, p. 206.

if they happened to be cross-ways with the bed they turned the person round so that he would go with the boards.

Cups-and-Saucers :—The leaves of the navel-wort (*cotyledon umbilicus*) ; found in profusion in the crevices of old walls.

Cut : *Cutty (Cutty-wren)* :—The kitty-wren (*troglodytes vulgaris*).

It is considered a sign of good luck if a “cutty” or “cuddy” builds in your hayrick, though if it is heard to sing or cry very much it is held to be a sign of rain.

In conjunction with the robin, the wren is always looked upon with affection, and treated as a friend by the poor, who often repeat the following verses :—

“If 'twere not for the robin and the wran,
A spider would overcome a man.”

Again, the particular providence which is supposed to watch over them is testified by the lines often heard :

“The robin and the wren,
Are God Almighty's cock and hen,”

to which are sometimes added—

“The martin and the swallow,
Are God Almighty's bow and arrow.”

[See note to “*Reddick*.”] I trust—but of this I am not certain—that the barbarous custom of “hunting the wren” at Christmastide was never popular in Dorset.

Daffidoundilly :—The daffodil (*narcissus pseudo-narcissus*).

You should always take care when daffodils or Lent lilies are brought into the house for the first time in the season that they should consist of a good quantity, for otherwise something would be sure to go wrong with your poultry.

Devil's cow :—A flat kind of beetle.

Devil's snuff-box :—The puff-ball.

Dew-berry : A large kind of blackberry.

Die-dapper :—A dabchick.

Dill-cup :—The butter cup (*ranunculus bulbosus*).

Dish-washer :—The water-wagtail. (See *Polly-Wash-Dish*).

Dock :—The plant *rumex*. Children rub dock leaves on their

skin as an antidote to the stinging of a nettle, singing “Out nettle, in dock.”

Dog :—The howling of a dog by night, or before the house door, is looked upon as an omen or sign of death.

Dorset being an agricultural, and particularly a dairy-farming county, perhaps the following somewhat repulsive recipe or charm for a cool hand in butter-making may be of interest to some of my readers :—Take a young dog or puppy, cut it open, and put your hand and arm inside whilst the animal is still warm.

Drooping-Bell-of-Sodom :—The snake-lily (*fritillaria meleagris*).

Dumble-dore :—The humble-bee.

In most counties the bee is considered as a peculiarly apt subject of augury for good or ill. In Dorset it is believed that if a young “dumble-dore” or humble-bee comes inside the house it denotes the arrival of a stranger during the day. You must not, however, drive it out, or it will bring you ill luck, for such an act is looked upon as driving out a friend. But it is at the time of swarming that bees become particular objects of veneration and often of alarm. For instance, if a swarm of bees take possession of a roof of a house it portends death to the owner of it. Again, if the swarm settles on a dead branch of a tree or shrub, or pitches upon dead wood, it is looked upon as a sign of death. It is, moreover, considered very unlucky to “pot” a swarm of bees after nightfall.

The period at which the swarming should take place, in order to be of value to the owner, is shown by the following lines :—

“A swarm of bees in May
Is worth a load of hay.
A swarm of bees in June
Is worth a silver spoon.
A swarm of bees in July
Is not worth a fly.

To dream of bees or wasps is looked upon as a sign that you have enemies who are trying to do you some secret mischief.

Dunch-nettle :—The dead nettle (*lamium purpureum*).

Dunnick :—The hedge-sparrow.

Dun-piddle :—The kite or moor-buzzard.

Eäcor :—An acorn (*lamium*).

Eäss :—An earthworm.

Eggs-and-bacon :—The flowers of the bird's-foot trefoil ; the field snap-dragon or toad-flax (*linaria vulgaris*), also called *Tom Thumb's fingers and thumbs*. See *butter-and-eggs*.

Eltrot : (*Eltroot*) :—The stalk and umbel of the wild parsley (*anthriscus sylvestris*).

Ever-grass : (*Every-grass*) :—A species of grass or rye-grass (*lolium perenne*).

Evet :—An eft ; an ewt, or a newt. [Note in 1886 *Glossary*, p. 62. The Saxon is *efete*, nearest to which is the Dorset *evet* ; but *newt* seems to be a blunder of taking *an-ewt* for *a-newt* and putting the *n* of the article on to the name. The sister Teutonic tongues show no such shape. *Ewt* may be a shortening of *ewet*.]

Farewell-Summer :—The dwarf Michaelmas daisy (*aster tripolium*).

Fire-tail :—The redstart.

Flesh-fly :—The blow-fly (*musca vomitoria*).

For the superstition obtaining as to the killing of flies or black-beetles, see note to *Biddle*.

Flook (*Fluke*) :—A worm (*distoma hepatica*) found in the livers of “coathed” sheep ; the plaice.

Foresters (*Forest-flies*) :—Horse-flies.

Freemarten :—The female calf of a twin, of which the other is a bull. It is always said to be barren. [Note in *Glossary*, p. 56. “When twin calves are born they may be both perfect bull or perfect cow calves. When one is a bull calf and the other is a cow calf the latter in general will not breed from malformation of the genital organs. Mayo's *Physiology*, 4th ed., p. 390.”]

Frith :—Brushwood.

Frog-hopper :—The whole of the genus *cicada* or *tettigonia* of Linnæus is often so-called.

Frog's-meat :—The leaves of the wake-robin (*arum maculatum*).

Gapmouth :—The goat-sucker or night-jar.

Gawky :—The cuckoo : pronounced *gookoo* in Dorset.

It is commonly believed that whatever you happen to be doing when you first hear the cuckoo you will be mostly doing during the year. It is also important when and where you hear it, for if it is after Old Midsummer Day, or you happen to be in a churchyard, you won't live the year out. That Midsummer is an unusually late period to hear the cuckoo, we may gather from the following lines, which were repeated by an old woman, who has recently died, in the village of Symondsbury, aged nearly 90 :—

“Cuckoo is here (heard ?) in April,
Cuckoo is here in May,
Cuckoo here on Midsummer's Eve,
But not on Midsummer's Day.”

With this we may compare a local variant of the better known rhyme :—

“In April
He comes ;
In May
He sings all day ;
In June
He changes his tune ;
In July
He prepares to fly ;
In August
Go he must.”

Giddy-gander :—The early purple orchis (*orchis mascula*) and the green-winged meadow-orchis (*orchis morio*) and other common species of orchis are so called in the Vale of Blackmore. (See *Single-castle*). An ointment of a bright delicate green colour used to be made from the large butterfly-orchis (*orchis bifolia*) and applied to ulcers.

Gilt-cup (Gilty-cup) :—The butter-cup (*ranunculus bulbosus*), so-called from the gold-like gloss of its petals.

Gipsy-rose :—The lilac field-flower (*knautia arvensis*) ; the *scabiosa atropurpurea*.

God Almighty's Cow :—The lady-bird (*coccinella septem punctata*).

[Note in *Glossary*, p. 58. "Children will often catch this insect, and, as Howitt says, children do in Germany, put it on the tip of a finger repeating :

"Leady-bird ! leady-bird ! vlee away hwome ;

Your house is a-vire, your childern wull burn."]*

The number of spots on a lady-bird's wing is sometimes taken to foretell the price of wheat, each spot representing a shilling per bushel, and so on.

Golden-chain :—The laburnum (*cytisus laburnum*).

Golden-drop :—A variety of wheat.

Goose :—It is generally believed that if geese fly up hill it foretells fine weather. If they fly down hill the reverse may be expected.

Grab :—The crab-apple.

Grabstock :—A young crab-tree, or the cutting of one.

Grammer-greylie :—The blue-bell, or rather the wild hyacinth (*hyacinthus non scriptus*).

Gribble :—A young crab-tree or black thorn ; or a knotty walking stick made of it.

Hails (Hayels) :—Haws ; the fruit of the hawthorn (see *Bird-pears*).

Hairy-palmer :—A caterpillar. Also the palmer-worm.

Hame (Haulm) :—The hollow stalks of plants (e.g., beän-hame ; peäs-hame ; teäty-s-hame).

Hart-berry :—The whortle-berry ; bilberry (*vaccinium*).

Harvest-man :—The crane-fly or daddy-long-legs (*tipula oleracea*).

Hasketts :—Hazel and maple bushes ; brushwood.

Hassock (Hassick) :—A tuft of sedge.

Hav :—The spikelet of the oat (*avena sativa*).

Haves (Heps) :—The fruit of the wild rose—the dog-rose (*rosa canina*) and other species.

Häy-mäiden :—A wild flower or plant of the mint tribe ; ground ivy (*glecoma hederacea*), used for making a medicinal liquor called "häy-mäiden tea."

* Conf. Spanish version there given.

Heäre-nut :—*Bunium flexuosum*. Hares are fond of its green leaves. Boys eat its roots or nuts in the spring.

In *Notes and Queries* (6th series, iv., 406, 457) two correspondents give evidence from a Dorsetshire source of the belief in the efficacy of a dose of hare's brains as a means of soothing troublesome infants. At another reference (xi., 306) is an account of a rabbit's brains having been given to a child at Lyme Regis with the same object. It is a common belief in Dorset that an old witch often takes the form of a hare and haunts the downs and hills at night, being only visible at the dead of night, and that nothing will take effect against her but a silver bullet. (See *The Haunted Hare*—one of the “Songs of Dorset,” contained in a collection of poems called *The Olden and Modern Times*, by the Rev. W. Smith-Marriott, published in 1855).

Helrut (Helroot) :—The herb Alexander (*smyrnium olusatrum*) [Portland] (? heal-root).

Hen :—It is considered unlucky to set a hen upon an *even* number of eggs. I have been told it used to be considered in Dorset that the proper (though to my notion somewhat barbarous) way of “setting a hen” was to put its head under the right wing and swing it round till it fell asleep (!) before placing it on the eggs!

Upon this subject I have received the following note from the late Rev. W. K. Kendall, Vicar of East Lulworth, to whom I am indebted for several interesting items of folk-lore :—

“In setting eggs under a broody hen the country people believe it best to set an uneven number, as 9, 11, 15, &c., and many also are careful to set them during the increase of the moon. These fancies are as old as Columella, who says (viii., 5) ‘Numerus ovorum quæ subjiciuntur impar observatur nec semper idem. . . . Semper autem cum supponuntur ova considerari debet, ut lunâ crescente a decimâ usque ad quintam decimam id fiat.’” It is to be observed that in Columella's time (early part of first century of Christian era) it was not sufficient that the moon should be merely waxing; it must have been nearly full. I am not aware that that restriction obtains in Dorset, either in the setting of hens or with

regard to the similar superstition attaching to the slaughter of pigs (see *Mallocks*).

Hoils (Iles) :—The beard or awns of barley (see *Spiles*).

Holrod (Olrod) :—The cowslip (*primula veris*) [Swanage] (*Conf. Helrut*).

Homble :—A duck.

It is a subject of common belief that ducks hatched in May are more liable to sprawl than those hatched at any other time of the year.

Home-screech :—The missel-thrush (see *Stone-thrush*.)

Honey-zuck :—The honey-suckle (*lonicera periclymenum*).

Hoop :—The bullfinch (see *Mwope*).

Horse :—The belief that the character and quality of a horse can be gauged by the number of white legs or “stockings” he possesses is too widely spread for me ever to imagine that the following version is even confined to Dorset :

“ If you have a horse with *four* white legs,
Keep him not a day ;
If you have a horse with *three* white legs,
Send him far away ;
If you have a horse with *two* white legs,
Sell him to a friend ;
If you have a horse with *one* white leg,
Keep him to the end.”

[*Conf.* : A Warwickshire version :

“ *One* white foot, buy him ;
Two white feet, try him ;
Three white feet, no go ;
Four white feet, give him [to] the crow.”]

Hoss-adder :—} The dragon-fly (*libellula*).

Hoss-stinger :—}

I may mention here that, as a rule, the country folk are right as regards the natural attributes which their provincial names imply, but in this case it is a misnomer; for the dragon-fly, however uncanny an object it may be to handle, is not provided by nature with the means to earn the name here given to it.

Hoss-tongue :—The hart's-tongue fern (*scolopendrium vulgare*).

Hud (Hood) :—The hull or legume.

Ingle-dog :—An earthworm (Marshwood).

Jack-in-the-Green :—The polyanthus (*primula variabilis*).

Jilloffer :—The gilliflower or stocks (the *cheiranthus cheiri* and *matthiola incana*). **1413059**

Jobbler :—The wheatear.

Keif :—The waste of short straws, &c., in threshing (? chaff).

Kecks (Kex) :—The dead stalk of hemlock or cow-parsley (see *Cax-head*).

Keys :—The seed vessels of the sycamore and maple.

Kid :—A pod or legume (e.g., a bean-kid; a pea-kid).

Kiss-me-quick :—The red valerian (*valeriana rubra*) ; called in other counties *Pretty Betsy*.

Kitty-coot :—The water-rail (see *Skitty*).

Knap :—The yet unopened flower-head of the potato and some other plants.

Lag-wood :—The large sticks from the head of a tree ripped of bark. The smaller ones are called “rundlewood,” q.v.

Lam's grass :—Spring grass ; early grass, as distinguished from eegrass.

Lavers (Levers : Livers) :—The great yellow flag or its leaves (*Iris pseudacorus*).

Leüdy's-cushion :—The thrift (*armeria vulgaris*) [Portland].

Life-of-man :—See *Moses-in-the-bulrushes*.

Lily :—If there are six blossoms on most of the spikes of the white garden-lily (*candidum*) the price of wheat will be six shillings per bushel ; and so forth. The same calculation is made from the number of spots on the lady-bird's wings.

Loup :—A kind of sea-louse, somewhat like a wood-louse, which, in warm summer weather, eats the bait which fishermen set in lobster pots. The late Rev. Canon Bingham is my authority for the statement that nine lice (not wood-lice, but the ordinary species) eaten upon a piece of bread and butter is a sovereign remedy for jaundice, and he further stated that upon enquiry he found that

such a recipe was generally known and practised in certain parts of Dorsetshire.

Madders (*Mathers*) :—The stinking camomile (*anthemis cotula*).

Magpie :—The belief that the appearance of the magpie, according as it is seen alone or accompanied by others of its species, has an influence in the course of human events is common to many countries. The form best known to me as obtaining in Dorset is the following :—

*One sign of anger,
Two sign of mirth,
Three sign of wedding,
Four sign of birth.*

And some will add :

*“Five heaven, six hell,
Seven the deil’s ain sell.”*

But this last line savours too strongly of a Scottish accent to please Wessex ears.

It is believed in some parts of Dorset that if a magpie remain over a man in the plough field all day he will be sure to die.

Mallocks :—Pigs.

You should never eat pig’s brains (or, as some say, pig’s marrow) as it makes you tell all you know.

Some people are very particular as to what time of the moon their pigs are slaughtered for market, as it is believed that if they are killed during the waxing of the moon the carcases will gain in weight, but that the reverse will be the case if it be done when the moon is waning. Conf. note to *Hen*.

Marten :—A heifer that will not breed (see *Freemarten*).

May-balls :—The *balls* of white flowers which characterise the cultivated variety of the Guelder rose. Also called *Snow-balls*.

Meäden :—Same as *madders*, q.v.

Meäden-tree :—A tree not pollarded. [Note *Additional Glossary*: “It is an axiom here that none but a plant raised from a seed and never cut off will produce decent timber. The idea of ‘maiden’ is no doubt this: that the plant has never produced

anything by way of offspring ; thus a polling, or such cutting off, results in the production of several shoots or stems, and if only one of these be allowed to grow yet it never becomes good timber.”]

Mearly tears :—The spotted liverwort (*pulmonaria*).

[Note in *Additional Glossary* : “ At Osmington, and, no doubt, at other places in our county, there is a survival of a sweet, simple, old-world piece of folk-lore about the spotted liver-wort. The cottagers like to have it in their gardens, and call it ‘ Mary’s Tears.’ The legend is that the spots on the leaves are the marks of the tears shed by St. Mary after the crucifixion. Further, and this to me is a quite unknown tradition, her eyes were as blue as the fully opened flowers, and by weeping the eyelids became as red as the buds.”]

Another form of this legend is given by Mr. H. J. Moule in the *Folk-lore Journal*, vol. vi., p. 118, as follows :—“ There stood by the cross His mother. Now, there grew on Mount Calvary a green-leaved plant with flowers of deep azure blue, but the buds were red. St. Mary’s eyes were blue as the flowers, but with weeping her eyelids were as red as the buds. And, as she wept, her tears fell on the leaves and spotted them. And spotted they have been from generation to generation ever since, and the plant is grown in cottage gardens, and its name is “ Mary’s Tears.” But books call it *Pulmonaria*.”

Since this paper was read before the recent *Field Club* meeting at Dorchester, I have received the following note from a lady who spent her childhood in North Dorset, and to whom I am indebted for several interesting items of plant-lore, &c.—in which she says : “ It is not correct to call this plant *Liver-wort*—that is *Hepatica* ; it should be called *Lung-wort*. I have heard it called *Faith, Hope, and Charity*. The flowers are first red, then lilac, then blue. Probably the name ‘ Mary’s Tears ’ was originally applied to the larger kind—*Pulmonaria angustifolia*—which has handsome and conspicuously spotted leaves.”

Meat-ware :—Potatoes ; pulse ; and other farinaceous food.

Meoze (Mesh) :—Moss.

Merry :—The wild cherry (*cerasus sylvestris*).

Miller (Millard) :—A large white moth, such as the puss-moth (*phalena vinula*) and the pale tussock-moth (*phalena pudibunda*).

[Note in the *Glossary*, p. 70 : “Children catch these moths or ‘millers,’ and, having interrogated them on their taking of toll, make them plead guilty and condemn them in these lines :

‘ Millery, millery, dusty poll !
How many zacks hast thee a-stole ?
Vowr an’ twenty, an’ a peck.
Hang the miller up by ’s neck.’”]

Milk-maids :—The white campion (*lychnis vespertina*).

Mock :—The butt or stump of a tree. [See *Moot*.]

Money-Spider :—The *arauna scenica*.

If you take a money-spider by the thread that it hangs from and swing it three times round your head without throwing it off, and then put it in your pocket, it is believed it will soon bring you money.

Moot :—The butt of a felled tree ; the bottom of its trunk and its roots. [See *Mock*.]

More :—The top root of a flower or small plant ; the single root of a tree.

Moses-in-the-bulrushes :—The spider-wort (*Tradescantia virginica*). Also called *Life-of-man*.

Mote :—A stalk of corn or grass [e.g., a straw-mote. See *Stramote*.]

Mouel :—The field-mouse (*mus sylvaticus*).

Mourning-widow :—The cultivated variety of the dark scabious (*scabiosa atropurpurea*).

Mutton-tops or chops :—The young tops or shoots of the goosefoot (*chenopodium*) sometimes boiled in the spring for food.

Mwope :—The bullfinch (see *Hoop*).

Nessel-tripe :—The most weakly or last-born of a brood of fowls, the fare of pigs, or a family of children.

Nettle :—The pharmacopeia contained in the country lore of most districts provides for the alleviation or cure of the effects of a

sting from this obnoxious plant. The following lines show what in Dorset is considered the proper time for getting rid of the plant altogether :—

“Cut nettles in June,
They come again soon
Cut them in July,
They’re sure to die.”

Nirrup : A donkey.

The three stripes found on a donkey are believed to denote the three strokes given by Balaam to his ass.

Nut :—Double or twin-nuts are often carried in the pocket as a specific for toothache.

Oak :—The aid of the oak tree is sometimes invoked as a charm against tooth-ache. The proceeding is as follows :—Go to a young oak-tree, cut a slit in the tree, cut off a bit of your hair, put it under the rind, put your hand up to the tree, and say, “This I bequeath to the oak-tree, in the name of the Father, and of the Son, and of the Holy Ghost. Amen.”

For the use of the oak, in conjunction with the ash, as an augury of the weather, see note to *Ash-candles*.

Odrod :—See *Holrod*.

Old-man’s-beard :—The mare’s tail (*hippuris vulgaris*).

Old-man’s-beard :—The seed-vessels of the wild clematis (*vitalba*).

Orgin :—The herb pennyroyal (*mentha pulegium*).

Pane :—A parsnip.

Pimrose :—The first *r* is always omitted in proper Dorset pronunciation. The same superstition that prevails with regard to bringing daffodils into the house, obtains with primroses also. See *Dafidowndilly*.

Piss-a-bed :—The dandelion (*taraxacum dens-leonis*) ; more especially the narrow dandelion (*leontodon taraxacum*) said to be very diuretic ; whence its name in Dorset as in France (*pissenlit*).

Pitcher :—A wild plant ; a pollard willow.

Plant :—When a plant is primed or cut, you must take care that the turnings or cuttings are never put in the fire, but are

thrown away ; otherwise the plant will never thrive. I am told that this custom should be particularly enforced in the case of Christmastide decorations, which should never be burnt after they are taken down, on pain of the most terrible disasters following upon the infringement of the rule.

Polly-wash-dish :—The water-wag-tail. [See *Dish-washer*.]

Pommice (*Pummice* : *Pummy*) :—The dry substance of apples after the juice is pressed out of them in the cider-press. Pheasants are particularly fond of “apple-pommice,” and a few heaps spread in a copse have been very effectual in preventing wild birds from straying out of bounds.

Rams'-claws :—The stalks and stalk-roots of the creeping crow-foot.

Ramsons :—The broad-leaved garlic (*Allium ursinum*).

Reddick (*Ruddock*) :—The robin red-breast.

The robin, no less than the wren, has always been looked upon by country-folk with affection and regard. The sweet and pretty legend that the red plumage of his breast was owing to the fact that it was a robin that wounded itself by pressing against the thorns that composed our Saviour’s crown made it an object of veneration to many, so that we cannot wonder that it forms a conspicuous subject for augury.

If a robin comes into a house it is looked upon as an omen of death ; and I have heard it said that if the “sighing” of a robin is noticed near a house it foretells illness or death to some one of its inmates. It is extremely unlucky for any one to kill a robin ; and it used to be said to children that if they ever took robins’ eggs from a nest their little fingers would be sure to grow crooked.

[For the connection of the robin with the wren see note to *cutty*.]

Red-roughs :—Scarlet runners ; French beans.

Red-sojer (or *soldier*) :—The scarlet burnet-moth.

Red-weed :—The poppy (*papaver rhoas*).

Rere-mouse :—A bat (see *Air-mouse*).

Rice :—Brushwood.

Robinhood :—The red campion (*lychnis dioica*) and the ragged-robin (*lychnis flos cuculi*).

Roman Jasmine :—The *syringa* or mock-orange flower.

Rottle-penny :—The yellow rattle (*rhinanthus cristagalli*). See *Shackle-boxes*.

Rouets :—Tufts of rough grass.

Rough-leaf :—A true leaf of a plant, in distinction from its seed-leaves or cotyledons.

Rundle-wood :—The small sticks from the head of a tree ripped of bark. The larger ones are called “lagwood,” q.v.

Screeches :—Swifts.

Shackle-boxes :—The seed-vessels of the yellow rattle (*rhinanthus cristagalli*). See *Rottle-penny*.

Shepherdless :—The yellow wag-tail.

Shrowcrop :—The shrew-mouse. [Note in Glossary: “The folklore of Dorset is that if a shrew-mouse run over a man’s foot it will make him lame. Hence, in Hampshire, it is called the ‘over-runner.’ Again in the Additional Glossary he says: ‘It may not seem clear what a shrew-mouse has in common with a woman shrew. The shrew-mouse gives a shrill shreaking (*sic*) sound, and I believe the shrew is so-called from her shrill shreaking (*sic*) voice in scolding.’]

Silgreen :—The house-leek (*semper vivum tectorum*). Its leaves are thought to be cooling and are used with cream for the blood.

Single-castle :—The *orchis morio* and *mascula* (Portland). (See *Giddy-gander*).

Sives :—Garlic (*allium schuenoprasum*) used as a pot-herb.

Skimps :—The inner skin or husk of flax used for fuel in drying it.

Skitty :—The water-rail (see *Kitty-coot*).

Skiver-wood :—The spindle-tree (*euonymus Europaea*) of which skewers are made.

Snags :—The fruit of a species of black-thorn, smaller than sloes (*prunus spinosa*).

The sloe is used in some parts as a charm against the recurrence of or a cure for warts ; when to obtain the wished-for result the following process is particularly to be observed :—Go to a sloe-bush unseen ; bite off a part of a growing sloe, leaving the portion with the stone in it on the bush ; rub the wart with the part bitten off, and throw it over your head or shoulder.

Snail :—The following lines are often used by children in the endeavour to charm snails out of their holes :—

“ Snail, snail, come out of your hole,
Or else I'll beat you so black as a coal.”

Snake :—It is believed that a snake can always be stopped, or diverted from your path, if you repeat the following verse :—“ Let God arise, and let his enemies be scattered.” It is believed by some people that a snake-skin worn in the hat or bonnet is a remedy for head-ache. (See note to *Adder*.)

Snake-flower :—The wind-flower (*anemone nemorosa*.)

Snalter (snorter) :—The wheatear [see *Jobbler*] (Portland).

Snow-balls :—See *May-balls*.

Soyer (soyerflower) :—The soldier-flower (*pyrochrosa rubens* or *orchis militaris*). Also the insect *soldier*.

Spears :—The stems of the reed (*arundo phragmites*) sometimes employed instead of lattice to hold plaster.

Spik (spike) :—The lavender plant (*lavendula spica*).

Spiles :—The beard or awns of barley. [See *Hoils*.]

Squid :—The sea-parrot.

Stare :—The starling.

Stone-thrush :—The missel-thrush (*turdus viscivorus*). [See *Home-screech*.]

Storm-cock :—Another name for the missel thrush.

Stout :—The gad-fly or cow-fly (*tabanus bovinus*).

Strāmote :—A stalk of straw or grass [see *Mote*.]

Strawen :—A “ strawing ” of potatoes is the set of potatoes or stalks growing from one mother tuber.

Stubberd :—An early kind of apple.

If an apple tree blossoms out of season—*e.g.*, in the autumn, it

is regarded as a sign that one of the owner's family will die before very long. Upon this subject the late Rev. Canon Bingham made the following communication to *Notes and Queries* (4th series, x., 408) :—

"Remarking an apple blossom a few days ago" (month of November) "on one of my trees I pointed it out as a curiosity to a Dorset labourer. "Ah! sir, he said, "'tis lucky no women folk be here to see that," and upon my asking the reason he replied, "Because they'd be sure to think that somebody were a-going to die."

An apple-pip is often used by girls as a test of their lover's fidelity. If, on putting it on the fire, it burst with the heat she is assured of his affection, but if it is consumed in silence she may know he is false.

Swallow-pear :—A tiny wild pear; so called because it can be taken whole at a swallow.

In some parts of Dorset the same superstitions which obtain as to the blossoming of apple trees out of season applies also to pear trees, when such an unusual occurrence presages trouble or death.

Tarvatch :—A species of tare (*ervum*) that grows among the corn and in wet weather weighs it down.

Tissty-tossty :—A cowslip-ball, consisting of the blossoms of cowslips tied in a globular form.

The following lines are repeated by children while playing with it :—

"Tissty-tossty, tell me true,
Who shall I be married to?"

The names of A, B, C, &c., &c., are mentioned until the ball drops. And again :

"Tissty-tossty, four-and-foarty,
How many years shall I live hearty?"

The numbers one, two, three, four, &c., &c., are called out until the ball drops as before.

Toad's-meat :—Toadstool; fungus.

The idea that the toad is capable of exercising the most malign

influence over persons is firmly rooted amongst the superstitious of most countries. In Dorset it is believed that if a toad should once seize a person nothing will make it loosen its hold except boiling water be poured upon it. It is considered very unlucky if a toad goes over your foot. Whenever you see a toad you should always spit or throw a stone at it, in order to ward off any evil effects the sight of it would otherwise cause you. The idea here of spitting as a preventive of ill may have something to do with the power the toad is said to possess of spitting its "swelter'd venom" at those who happen to annoy it. I have heard more than one curious story of the baneful effects which this "spitting" has supposed to have caused.

The belief that a toad, or portions of a toad, worn in a bag, are of great efficacy as a charm or preventive against evil, is prevalent in many parts of Dorset; and not long ago, a "cunning man" or witch-doctor, used to hold an annual levée in the neighbourhood of Stalbridge, when he sold out to crowds that thronged round him the legs torn from a living toad and placed in a bag, which was worn round the neck of the patient, and counted a sovereign remedy for serofula and the "overlooked." It was called "Toad Fair."

In the recently published *Life of William Barnes*, by his daughter Mrs. Baxter (p. 155), is an account of a quack who lived at Lydlinch, and who professed to cure the king's evil or serofula by means of a charm consisting of a toad sewed up in a small bag, which was to be worn round the neck. It was, however, only beneficial in the beginning of May at a particular phase of the moon. In Roberts's *History of Lyme Regis* (1834), p. 261, the author states that toads that had gained access to a cellar or house were ejected with the greatest care, and no injury was offered, because these were regarded as being used as *familiars* by witches, with veneration or awe.

Tom Thumb's fingers-and-thumbs :—See *Eggs-and-bacon*.

Underground-kitty-cat-weaver :—Query, the same as "under-ground jobbler," q.v. (Marshwood).

Underground-roses :—The double pink (*hepatica triloba*).

Vanner :—The kestrel hawk ; probably so-called from the way it appears to “fan” the air when hovering.

Veäre :—The weasel.

Veäry's head :—The fossil *echinus* ; the *galerites castanea* and some other such kinds.

Veäry's heart :—The fossil *echinus* (*spatanguis coranguinum*) common in the chalk and other formations in Dorset, and thought to be the heads or hearts of fairies.

Veary-rings :—The rings of fungi so often seen in the grass of our downs, which are said to have come from the dancing of fairies.

[Note in *Glossary*, p. 96 : “The belief in fairies, one of the most poetical and beautiful of superstitions, still lingers in the West. . . . Toadstools, or *swams* (our forefathers' word for the Latin fungi), are called fairy-stools, or, in Devon, pixy-stools ; for as they enrich the soil and bring the fairy-ring by rotting down after they have seeded outward from its centre, so that the ring of actual fungi is outside of the fairy-ring, it was natural for those who believed the ring to be brought by the dancing of fairies to guess that the fungi were stools upon which they sat down when tired.”]

Wag-wanton :—Quaking-grass (*briza*).

Want :—A mole.

Wasps :—To dream of wasps or bees is looked upon as a sign that you have enemies who are trying to do you some secret mischief.

Welshnut :—A walnut.

Wheat :—It is said that you ought on first eating anything made of new wheat to fill your mouth full, and then you will not want for anything during the year.

White-rock :—The *arabis verna-alpida*.

Winter-pick :—A kind of large sloe.

Withy-wind :—The large white convolvulus (*convolvulus sepium*).

Withy-hanger :—The bird tree-creeper.

Wood-culver : } The wood-pigeon or ring-dove [see *Culver*.]
Wood-quest : }

Woodwex :—The plant dyer's green-weed (*genista tinctoria*).

Yeat-smasher :—The wheatear [see *Jobbler*.]

J. S. UDAL.

Inner Temple,

February, 1889.





Notes on Botany (chiefly Geographical).

By the Rev. R. P. MURRAY, M.A., F.L.S.



ERY little, probably, now remains to be done for Dorset botany, so far as mere list-making is concerned (I am referring only to phanerogams). We already possess our President's "Flora of Dorset," and we are looking forward to a second and corrected edition. But let no one think that the work is done when the list has been made, or that the interest is exhausted. Rather, it is just beginning. Merely to know the Latin name of a plant is a small thing; to be cognisant of its present geographical distribution is not much; and these things can be learnt from the "manuals" and "Floras" which have lately become so numerous. They are our grammars and our dictionaries. They are indispensable, no doubt, in enabling us to read our particular volume of the Book of Nature, but let us not mistake them for the book itself.

Let us assume, then, that we possess a competent elementary knowledge of the botany of our immediate neighbourhood; in other words, that we know what materials are at our command with which to try and penetrate into some of Nature's secrets. What can we do? I would answer: Study structure and environment, and study history. For plants and animals have their

history as well as people and nations. It is a history which is harder to read, because it runs back into an antiquity to which the oldest records of our own race are as nothing ; but, on the other hand, the records (such of them as are left) do not lie to us ; they have no party bias, and there are no forged documents.

To-day I should like to lay before you a few thoughts which occur to me in connection with the later history of some of our rarer plants. How do we come to possess them ? We all know that the Flora of Britain is a derivative one. That means that our plants came to us as immigrants from other lands, and cannot claim to be *autochthonous*. And they came so recently (as geologists reckon time) that there has not yet been time enough for them to be differentiated into new species, distinct from those found on the Continent. To this there are very few exceptions. Among the fruticose *Rubi* a few British forms are as yet unknown elsewhere. The most marked of these is *R. longithyrsiger*, Lees [*R. pyramidalis*, Bab. non. Kalt.], which is found plentifully in many places in Wales and the south-western counties of England, and should be looked for in the western districts of this county. But it may also grow in Brittany, a province whose brambles require a very careful examination in connection with Damnonian forms ; and, again, it is in some of its states very close to *R. Bellardi*, Weihe, a well known Continental form.

Then we have another bramble widely distributed over this country (and also found in Hants), which, though referred by Professor Babington to *R. melanoxyton*, P. J. Müll., is stated by Focke to be quite distinct from that plant, and unknown on the Continent. Very curiously, he professes himself unable to distinguish it from *R. longithyrsiger*, which seems strange to those who know it in the fresh state. Perhaps one more bramble may be noticed—viz., *R. Lindleianus*, Lees. This is a well-marked and very widely distributed form in Britain, but was quite unknown on the Continent until very lately, when it was found in a single locality in Northern Germany. It is, however, possible that the form may have had there an independent origin, which is my reason

for mentioning it in this connexion. At any rate, we have here a very interesting question. It has generally been held that all individuals of the same species possess a common ancestry, the chances against the same form being independently evolved in two or more places being supposed to be indefinitely small. But why should not the same parent-species under similar or nearly identical conditions vary in the same way at more than one time? Long ago (if I remember aright) Professor Mivart argued in favour of this conclusion in the case of certain freshwater fishes, and, after all, the question of probability may be answered in more than one way. No doubt the chances are very small, yet from an indefinitely large number of opportunities the most unlikely results may be expected, though rarely.

In *Hieracium* it seems not unlikely that Mr. F. J. Hanbury's Scottish researches may result in the establishment of some endemic forms; but neither *Hieracia* nor *Rubi* can claim undoubted specific rank. Both genera (at least those sections with which we are concerned) would seem to be at present in a most unstable condition. Sub-species abound, but sharply defined *species* can hardly be found.

There is still one plant, which may possibly claim a purely British origin. I mean *Arabis ciliata*, R. Br., a very rare species found in Clare and Galway, and also reported formerly from Pembrokeshire. I do not know it all well, but it seems to me fairly distinct from any form of the common *A. sagittata*, D.C., and also from the continental *A. alpestris*, Schleich., with which it has sometimes been identified. Yet Hooker does not consider it more than a sub-species of *A. sagittata*. It will now, I think, be acknowledged, that our endemic forms are, to say the least, very limited in number and somewhat doubtful in quality.

Returning to the main question, it is well known that the late Edward Forbes considered our existing Flora as being composed of five distinct elements. What we may call our ordinary Flora is markedly Germanic in its type—*i.e.*, our common plants are identical with species indigenous to Germany and the neighbouring

parts of Europe. But our higher mountain summits yield us a very interesting group of plants, which are not Germanic, but Scandinavian in their extra-Britannic distribution. These Scandinavian species would come next to the Germanic in point of number. There were still, in Forbes' opinion, three small assemblages to be accounted for, one of these being situated in the south-east of England (Kent), another in the south-west of England and the south-east of Ireland, and the third in the south-west of Ireland.

How are we to account for these facts ; this particular grouping of plants within our area ? The question is one of wonderful interest, and I think that it has not yet found an altogether satisfactory solution. Forbes' theory was ingenious, and I may, perhaps, be allowed to refresh your memories by a brief *resumé*.

The great mass of the British Flora, as well as of the pulmoniferous mollusca, being Germanic, Forbes shewed that it had migrated from the Continent during the post-pliocene period, after the bed of the glacial sea had been elevated so as to form a land-passage between England and the Continent. Naturally the species of this type are most numerous in our eastern counties, and thin out gradually as we proceed westward.

But though the migration of plants and animals over the great Germanic plain accounted for the major part of our British species, there was still a considerable Flora, and a portion of our Fauna, which could not be traced to such a source, seeing that they are inhabitants, not of the ancient west of Europe, but of Scandinavia. These Alpine species could not have found their way to us *after* the Germanic forms, for their areas had then become isolated on mountain ranges. Geological evidence clearly showed that the central and northern parts of the British Isles, along with the Germanic plain, had at one time been covered with an Arctic Fauna and Flora. This was the glacial period, when an intense cold prevailed over central and northern Europe. During a part of this era Forbes maintained that our mountains rose above the sea as scattered islets, having a northern vegetation, and that as the land

rose, and these islets became isolated mountain tops, the Alpine plants remained only on the high ground, while the Germanic Flora spread itself over the lower plains and valleys, and dispossessed the Arctic forms as the climate grew milder.

Then still remained three limited assemblages of plants and animals, all derived from continental regions south of the great Germanic group. The Kentish and Devon Flora (with the latter of which we in Dorset are most intimately associated), according to Forbes, must have migrated (probably at two periods anterior to the Germanic migration) from the north-west and west of France, across a tract of land now destroyed. But, perhaps, the most remarkable of all the Floras is that characteristic of the south-west of Ireland. The peculiar plants of this region were found to be identical with species either confined to, or abundant in, Spain and Portugal. No marine currents could account for their transmission, nor could they have been conveyed as seeds through the air. The hypothesis which Forbes proposed was that at a period greatly earlier (post-miocene) than that of the origin of any of the other Floras there existed a tract of land between Ireland and the Peninsula, across which the Spanish vegetation crept towards the north-west.

Now, we need not concern ourselves with the Germanic or Scandinavian sections of our Flora. The theory which I have mentioned seems to account very well for this part of the question. Nor need we quarrel with the suggestion that the so-called Kentish and Devon Floras came to us from France. But I do not at all believe in any former land connexion between Ireland and the Spanish Peninsula. The soundings are too deep to admit of any such possibility. The special plants of Killarney and the west of Ireland must, as it seems to me, have reached us by the same route as the special plants of Dorset, and Devon, and Cornwall—*i.e.*, along the west coast of France. Why some of these are now confined (within our area) to Ireland, and some to the south-west of England; and why some are absent from western France is a problem which I can only commend to the attention of students,

without attempting to give any solution of my own. Perhaps the competition of other species which already occupied the ground was too keen to allow of the new comers establishing themselves in more than a very few localities; perhaps, on the extreme verge of their possible climatal extension northwards, they could find but few suitable stations.

But whatever may be the causes which may account for the present very scattered distribution of the rare plants which give a special character to our south-western (and to parts of the Irish) Flora, I should be disposed to think that their arrival within our own area took place at a more recent date than that suggested by Professor Forbes, and probably coincided in point of time with the *last* period of elevation. I think that none of these southern forms could have survived in our latitude during any part of the true glacial epoch, and that our oldest colonists are not those from Spain, but the northern forms which are now for the most part to be found only on the summits of Scottish mountains. Two plants there are, of American origin, which may have reached us earlier. I refer to *Spiranthes Romanzoviana*, Cham. [Co. Cork], and *Eriocaulon septangulare*, With. [Western Ireland and Skye.] But these were probably accidentally introduced, perhaps by the agency of birds, so that we have no clue as regards time in their case.

As typical instances of plants which have reached us from Western France or the Pyrenees, I may mention

Helianthemum guttatum, Mill., from Anglesea and Cork.

„ *polifolium*, Mill., Somerset and Devon.

Linum austustifolium, Huds.

Ulex: All our forms.

Trifolium Molinerii, Balb, *T. Bocconi*, Savi, *T. strictum*, L., from the Lizard.

Lotus augustissimus, L.; and *L. hispidus*, Desf.

Ornithopus ebracteatus, Brot.

Saxifraga umbrosa, L., and its allied forms from the west of Ireland.

Umbilicus pendulinus, D.C.

Physospermum aquiligifolium, Koch., from Cornwall.

Bupleurum aristatum, Bart.

Diotis maritima, Cass.

Lobelia urens, L., Devon and Cornwall.

Arbutus Unedo, L., Killarney.

Erica ciliaris, L., *E. vagans*, L., and *E. Mediterranea*, L.

Bartsia viscosa, L.

Pinguicula grandiflora, Lam., and *P. lusitanica*, L.

Thesium linophyllum, L.

Euphorbia Peplis, L., *E. Hiberna*, L., *E. pilosa*, L., *E. Portlandica*, L.

Romulea Columnae, S. and M. Dawlish Warren.

Simithis bicolor, Kanth. Bournemouth (now, I fear, extinct) and Kerry.

Juncus pygmaeus, Rich., and *J. capitatus*, Weigel. Cornwall.

Cyperus longus, L.

Mibora Verna, P.B., Anglesea.

Cynodon Dactylon, P., Dorset and Cornwall.

Bromus madritensis, L.

Adiantum Capillus-Veneris, L.

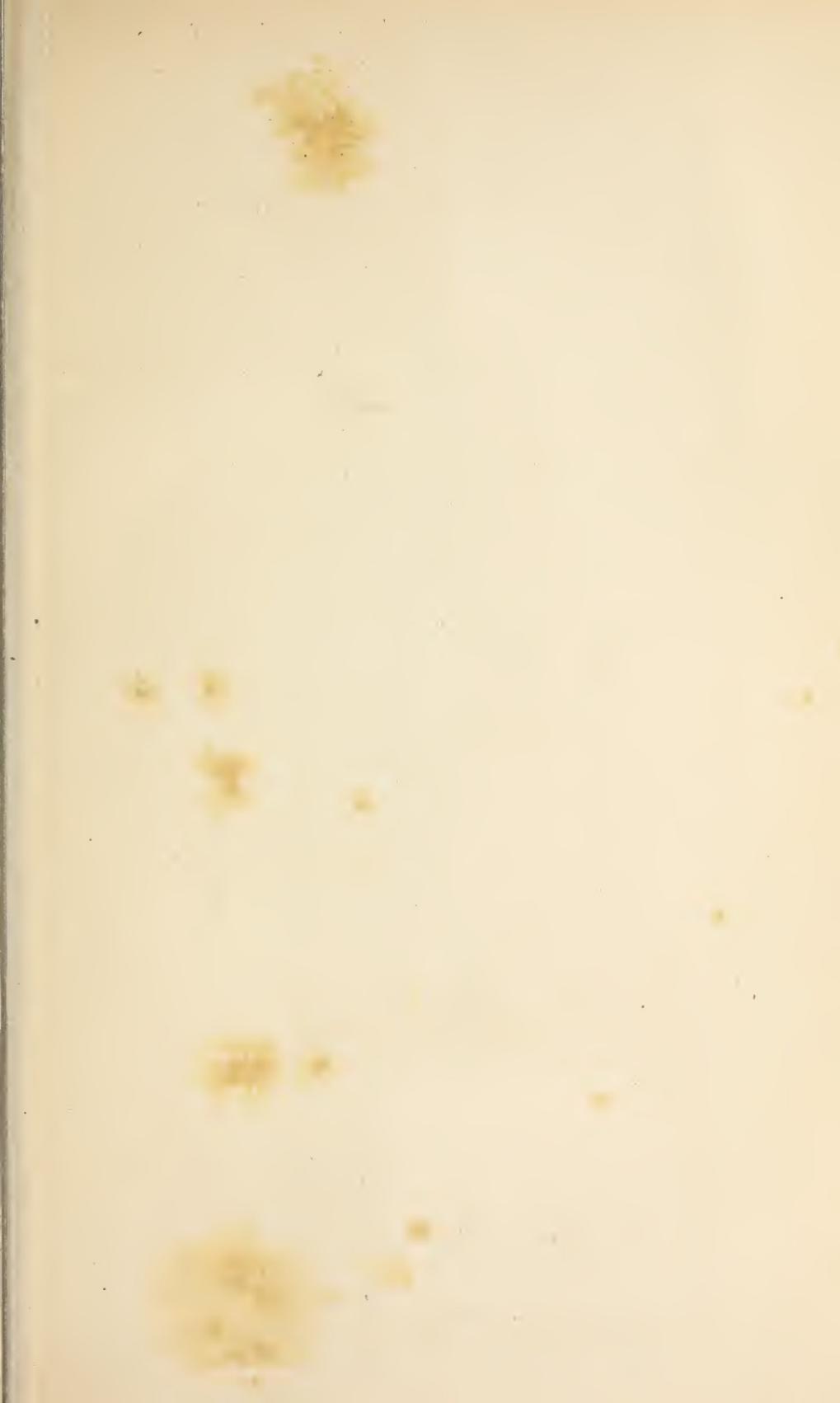
Several of these plants possess for us the special interest of growing within our own area ; most of them are confined to the Mediterranean region and to the Atlantic seaboard, and it has been a great pleasure to me when abroad for my summer holiday to study them, either on the western coast of France or further south in Portugal. How many thousands or tens of thousands of years must have passed since the sea forced its way through the straits of Dover, and so finally separated the British and Continental stocks, we cannot tell, but the period must have been vast. Yet how slight, or altogether imperceptible, the differences which time has caused ! Hardly a variety is known, even in such a plant as *Ophrys apifera*, Huds., though from its structure it seems to present almost insuperable difficulties even to an occasional cross with another individual, so that any variation which might arise ought to have every chance of preservation.

On the other hand *Rosa* and the fruticose *Rubi* seem to be at present in a most unstable condition. So, in its metropolis, is *Ulex*. Here we have three forms ; from the Spanish Peninsula Nyman enumerates 21, many of them, as I know to my cost, puzzling to the last degree. Now, here in Dorset, we have a good chance of studying one point in connection with this genus. *Ulex Gallii*, Planch. is very abundant on our heath-lands. Often it is typical enough, but frequently it gets very close to *U. nanus*, Forst, from which I suppose it to have been derived. In northern Portugal, I have observed typical *U. nanus* abundantly, but never anything like *U. Gallii*. This (sec. Nyman) first appears in northern Spain, then in north-western France, and finds its furthest extension in England and Ireland. We may conjecture, I think, from this distribution, and from the instability of the form, that we are looking, in *U. Gallii*, at the youngest, or one of the youngest, members of the Gorse family.

I will only add, in conclusion, that in botany, as in other subjects, it is very easy to ask questions but frequently very difficult to answer them.

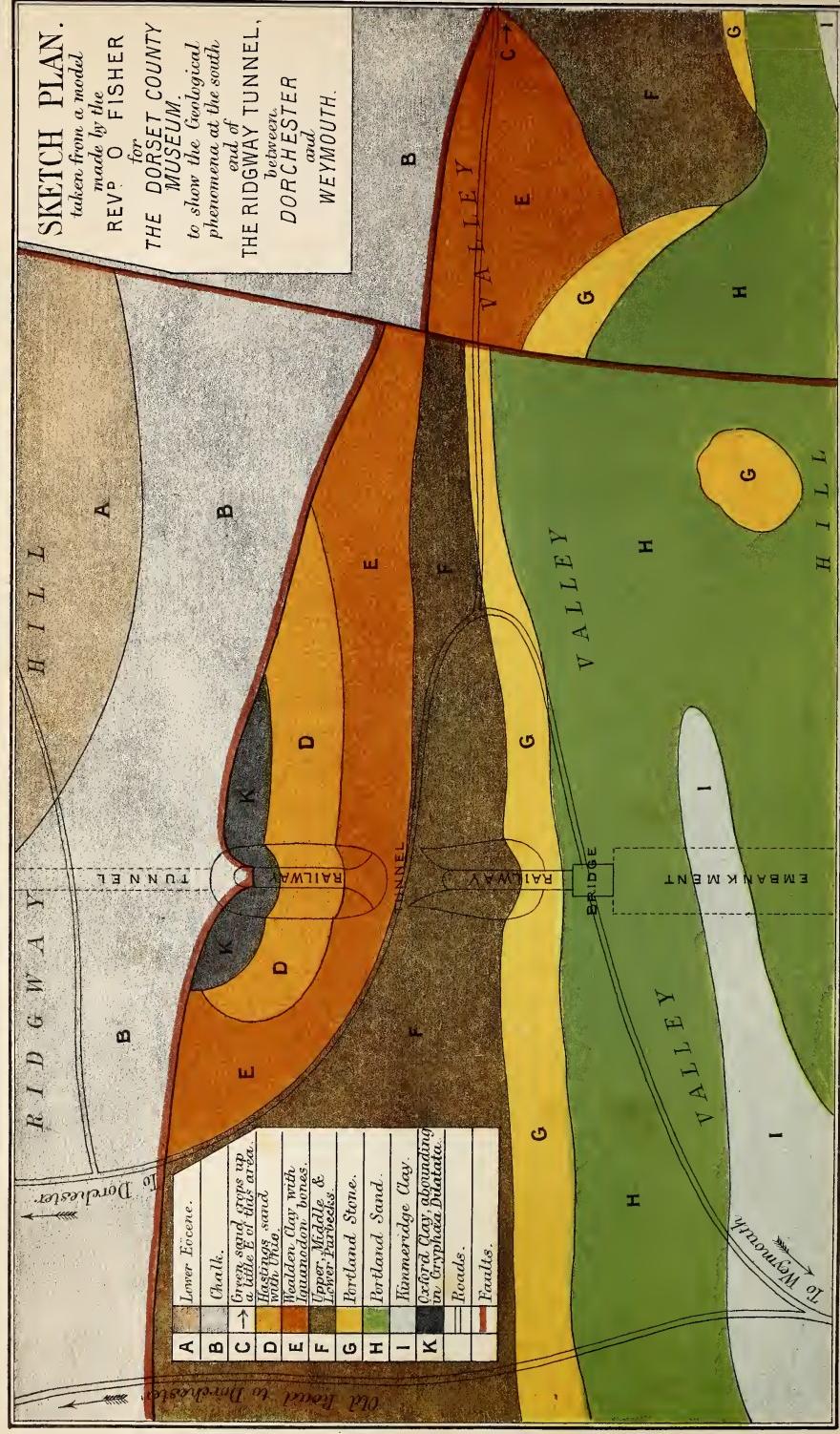
January, 1889.





SKETCH PLAN

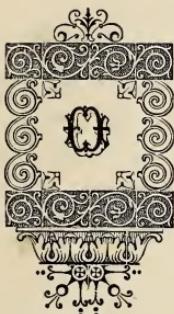
THE DORSET COUN-
TY MUSEUM,
to show the geological
phenomena at the south
end of THE RIDGWE TUNNE-





The Ridgway Fault.

By MORTON G. STUART, Esq., M.A., F.G.S.



UR custom of holding the annual business meeting of the year at the County Museum at Dorchester renders it difficult to find a suitable object for an excursion in the afternoon. In the case, however, of the Ridgway Fault to-day, we have before us a geological problem of considerable interest, which has affected to a very large extent the chalk formation, which obtains so large a development in the county, and consequently in the physical features and scenery of the district. There is a further reason why Ridgway Hill suggested itself as an object for an excursion this afternoon. For some time past I have been trying to collect materials for the description of the various features of the chalk of Dorsetshire, and at Ridgway Hill I thought the opportunity offered itself of noticing one of the most striking features of the great chalk formation of the county. From here one of the finest views of the surrounding country is obtainable. North and eastwards the heath districts of Moreton and Wareham are visible, resting on the Bagshot sands and gravels, reproducing the minor escarpment lines, and characteristic scenery of the Hampshire and London basins of the Tertiary age. Beyond the chalk downs spread far and wide. Standing on the edge of Ridgway Hill and looking

southwards a second minor escarpment is visible parallel to the first, formed by the harder beds of Kimmeridge clay. The steep and coombe-shaped valleys are a feature of this district, bearing on their sides, in various places, and especially near Bincombe, several terraces clearly cut and parallel to each other, the indications of a previous state of the cultivation of the soil. Further south lies the low ground occupied by Lodmoor and the tract surrounding the Weymouth Backwater, which consists geologically of a remarkable anticlinal axis formed of the various beds of the Forest marble, Kimmeridge clay, Oxford clay, Portland sand and stone successively, to which I shall refer more fully further on. Across the sea on our right hand lies that curious physical problem of the Chesil Beach, resting on its bed of Oxford clay, bounded beyond by the steep cliff of the Isle of Portland. On our left we see the fine coast line extending from Ringstead to White Nose Cliff, the furthest point visible from our present position, giving an excellent series of sections of Cornbrash, Gault clay, Greensand, Lower and Upper Chalk.

The Ridgway Fault, which is so intimately connected with the physical features of the district, extends for a distance of 15 miles from east to west along the southern edge of the chalk ridge, and is further complicated by a second cross fault cutting it, roughly speaking, at right angles. In addition to this, three minor faults are connected with the first mentioned fault, which run parallel to it and at no great distance from it.

So great is the magnitude of the disturbance wrought by this fracture, that the beds along the escarpment edge appear to have been altered in position by several hundred feet. The result of this is seen in a curious succession in the geological series on the south side of Ridgway Hill, which attracted the attention of geologists even in the early days of the history of the science. The white chalk is so essentially a feature of the county of Dorsetshire, that it is hardly necessary to allude to it. The white cliffs, the wide and spreading downs, the antiquarian features of the British tumuli, the Cerne Giant, and the equestrian figure of

George III. of later date, the escarpments rising like a wall from the lowlands of the vales dotted with white pits seen as landmarks so easily from a distance ; these all owe their origin to the chalk, whilst a glance at the geological map of England discloses the fact that here, in the western portion of the county, the various ridges of the chalk forming the North Downs, the South Downs, and the backbone of the Isle of Wight, and the Purbeck Hills converge into a parent nucleus. Across the bay in the grand cliff of Whitenose, too, we see the southernmost point in England, where the white chalk stands as a cliff from the water's edge. Nearer the western portion of the county, again, we are brought in contact with other interesting problems in connection with the chalk, for the lower beds have been gradually becoming thinner in the passage from the eastern portion of the basin westwards, until at Bere Head the upper chalk is found resting on the Upper Greensand, and the lower chalk, from Mr. Whittaker's observations, is represented by the Bere rock.

In the western and north-western portions of the county the character of, not the chalk itself it is true, but of beds closely beneath the chalk, becomes very interesting. The Chloritic Marl becomes extremely fossiliferous in the neighbourhood of Maiden Bradley, Chardstock, and Minterne. Near Chard the curious tabular flints occur in the Greensand at the base of the chalk, unlike anything of a silicious nature in this neighbourhood, of which we saw some excellent examples at our meeting in that district in July last year, and lastly we cannot omit from our survey the curious and interesting character which the Greensand assumes still further west at Blackdown. On such grounds as these the chalk formation, and the beds immediately connected with it below, become of special interest to the Dorsetshire naturalist. Still, however, it is an undoubted fact that we have no account of the Dorsetshire chalk as a whole ; the published memoirs of the Geological Survey do not embrace our own county, and reports which occur from time to time in the Quarterly Journal of the Geological Society, and elsewhere, deal with special points only.

Though it is not within the scope of the present subject to give a list of the various contributions which have from time to time been added to the common stock relating to the Chalk of Dorset, I cannot help alluding to some of these which have a special reference to the question, and which may enable us to estimate more thoroughly the interest of the landscape before us. After merely noticing the paper of J. F. Berger, written in 1811, we find that one of the earliest of the published accounts of the neighbouring geology was that of Webster, in the 4th volume of the Geological Transactions for 1814. Here the author traces the connection of the white chalk of the Needles with that of Handfast Point and the Old Harry Rocks, and speculates on the probable continuity of the chalk beneath the London Basin, though he says that the deep wells of London have never reached the chalk itself. He subsequently notices the existence of a bed of pipe clay in a horizontal position on the north side of the chalk hills from Handfast Point to Corfe Castle, containing a thin bed of coal, which he feels convinced is the same bed of coal originally continuous with that of Alum Bay,—to use his own words—“That this circumstance added to the quality of the clay, and its geognostic position is sufficient to identify it.” Further, he mentions that beds of ferruginous sands and ironstone occur in both Dorset and Alum Bay—considerable rocks of it are seen about Studland, and the Druidical monument called Agglestone, near that place, is a large block of that material. These deductions are interesting to us, but they are the more remarkable when we remember at what an early date in the history of geological investigation they were made, and yet how closely they correspond with the knowledge of to-day. In the year 1814 but little progress had been made in the science, and much that was known had still to be unlearnt—Plutonism and catastrophy were the prevailing theories. William Smith’s geological map of England, which placed the British sedimentary strata in an unvarying sequence, was not published until 1815. Sir Charles Lyell’s classical works did not appear until 1830.

In the year 1835 Messrs. Buckland and de la Beche published

their paper in the Transactions of the Geological Society on the Geology of the Neighbourhood of Weymouth. They recognised the importance of the district on the following grounds :—

1. Its position near the south-western termination of several principal formations of the island, including Tertiary strata, chalk, greensand, Purbeck and Portland beds, oolitic formations, and Lias.
2. As exhibiting a coast section forming an interesting comparison with the equivalent north-easterly terminations of the same strata on the Yorkshire coast.
3. As affording remarkable examples of violent disturbances, which have affected all these strata since their consolidation, and which have operated so extensively in Purbeck and the Isle of Wight and the Weald of Kent and Sussex.

Further, they pointed out the existence of an anticlinal axis, running in an east and west line near the sea, and defined the limits of the Ridgway Fault as well as the existence of four other faults of much smaller magnitude in the district. This, then, I think we may consider as the classical contribution to the subject. It was followed by two contributions to the Journal of the Geological Society for the year 1848, by Mr. C. H. Weston, entitled “The Geology of Ridgway, near Weymouth,” and “Sub-escarpments of the Ridgway Range near Weymouth and their Contemporaneous Deposits in the Isle of Portland.” Mr. Whittaker, in his paper in the Geological Society’s Journal for 1871, traced the gradual thinning out of the Lower Chalk and Chalk Marl from the Isle of Wight westwards, so that at Bere Head the Upper Chalk is found almost resting on the Upper Greensand, separated only by the Bere rock, the representative of the Lower Chalk. Mr. Osmond Fisher, whose name is chiefly identified with investigations into mathematical problems connected with geology—though this evening at Burlington House he is occupied with the description of the Fossil Elephant lately found near Dewlish—also contributed his share to the elucidation of this district—as we have seen from the model of the Ridgway Fault constructed and placed by him in the County Museum. He tells me that in a publication—“Barnes’ Guide to

Dorchester"—is a diagram of what he there saw when the railway cutting was made, and he describes it as the best, and indeed the only record of what was then to be seen. This work, I believe, is now very rare, but the note is quoted in Damon's "Geology of Weymouth." As a result of the fault a large exposure of the Purbeck beds takes place at Ridgeway, and a full description of the sections was published by the same author in the Transactions of the Cambridge Philosophical Society for 1855. From the Ridgway sections of the Purbeck strata and at Swanage, Mr. Fisher obtained a remarkable collection of insects, which are now deposited in the Woodwardian Museum at Cambridge. From France, however, curiously enough, originates one of the most complete accounts of the Dorsetshire chalk in a prize essay by M. Barrois published in a memoir of the Société du Nord, in which the character of the various beds, and their thickness in the different sections are laid down, and various zones are traced in the white chalk, determined by their characteristic fossils. The occurrence of these is established throughout the entire area with great care, and, I believe, with equal accuracy, and the essay is a testimony to the zeal of a foreigner working under difficulties in a strange country.

I have now given a general sketch of the position of the subject, and have endeavoured to describe the importance which, at so early a date in the history of geological science, was attached to the district in front of us by the investigators of the period. I will now proceed to the more special aspect of the district—namely, the character of the Ridgway fault itself.

Webster, in his paper before mentioned, has already shewn that the white chalk, as it is traced from the Isle of Wight to White Nose Cliff, is often found to be quite vertical, but frequently dips at a very high angle northwards. From White Nose to Bridport the dip varies from 10° to 40° northwards; whilst its mean elevation along this ridge is estimated at about 500 feet. Damon places its thickness at Blackdown, near Weymouth, at 800 feet. The mineralogical character of the chalk in this district and the

organic remains which it contains offer nothing of special interest ; the lower strata pass into beds of hard and rocky material, containing some grains of green silicate of iron, and throughout which the flints of the upper beds become very rare. Messrs. Buckland and de la Beche described the great Ridgway Fault as one of the most curious and instructive they had ever seen, in consequence of the variety of sections afforded along its course. They found abundant evidence of slickensides in some of the sections examined by them. The following description is taken in their own words from the paper previously mentioned :—“The Fault emerges from the Chalk formation at Moignes Down Farm on the north side of the Circus of Moignes Down, and brings the truncated lower ends of strata of Portland stone against truncated upper ends of strata of chalk, both dipping to the north. Here a valley of denudation runs exactly along the line of fault, having its north side composed of chalk and its south side entirely of Portland stone. The strata have been raised on both sides of this fault, but raised unequally, whence it results that on the north side the chalk rises to the fault, whilst on the south side the Portland stone dips towards it, as if plunging beneath the chalk ; whereas the Portland stone has been elevated from its original position relatively, though not absolutely much higher than the chalk. Yet, owing to the effect of denudation, no other results are visible than those of an ordinary valley of denudation of horizontal chalk.” Thus the authors proved this to be an example of an upcast fault—a rarer phenomenon than the more ordinary faults with a downthrow. In this case it is the strata on the south side which have been elevated relatively, and which would otherwise have dipped beneath the chalk. The fault extends about 15 miles in a due east and west line from Moignes Down Farm to Abbotsbury, where it bends round towards the north. We have just noticed the section at Moignes Down. At Sutton valley Portland sand forms the south side of the fault, and greensand surmounted by chalk the north. At Upwey Portland stone covered by Purbeck beds forms the south side and horizontal chalk the north side. Near Portisham the fault deviates to the

south-west for a short distance ; thence it extends in a direction almost due north. Here we find the Kimmeridge clay brought against the base of the chalk escarpment ; whilst at Abbotsbury the Oxford clay is brought against the greensand, it (the greensand) resting on clay, and the two beds are themselves horizontal. Such are the leading characters of the Ridgway Fault. Its existence, and the sections quoted, cannot, I believe, in many places be directly traced, since the railway cuttings have become much overgrown with grass, and have obliterated some of the best sections. But in the days when the line was cut and the tunnel bored, some highly interesting facts must have been disclosed for the geologist. Now we are able to infer the existence of the dislocation to a large extent by the anomalous position of the beds disclosed by any quarries, gravel pits, ditches, and roadside sections which may occur.

Remarkable as the Ridgway Fault may appear to be, both from the extent of country which it traverses and the magnitude of the dislocations occasioned by it, it is rendered the more important from the discovery by the Rev. Osmond Fisher of the cross fault, which cuts the former almost at right angles, running in a north and south direction up the valley by the side of the Weymouth and Bridport Road. On the east side of this Mr. Fisher tells me he found the Purbeck beds dipping northwards against the highly inclined chalk, and on the west side the Purbeck beds rise to the north against the chalk, which dips at a high angle towards the north. This fault, he says, runs towards Charminster, bringing the Eocene beds against Maiden Castle and throwing out springs about Whitwell, and forming the valley running towards Cerne.

Mr. Osmond Fisher made a further discovery in connection with this fault which, perhaps, is the most curious and singular feature of all. It was owing to the construction of the railway between Weymouth and Dorchester, and the trial shafts which were sunk for the tunnel, that excellent sections were exposed, and, fortunately, an experienced observer was on the spot to watch them. The account, with diagrams of the section, were published in a

little work entitled "Barnes' Guide to Dorchester," which is now out of print and difficult to obtain. The description of the section is copied in Damon's "Geology of Weymouth" at page 24. Mr. Osmond Fisher, on sending me the pamphlet last week, suggested that the section should be printed afresh in our "Proceedings," and this proposal, I think, we ought to follow. He says: "The singularity of the section consists in a portion of the Oxford clay making its appearance between the Wealden Beds, and where the fault cuts off the chalk." The writer, having opportunities of watching the progress of the works, was aware of an Oolitic clay appearing here so long ago as 1846 when the trial shafts were dug. He then found a piece of a shell of a *Trigonia* in the clay from the shaft; but when the cutting commenced *Gryphaea dilatata* occurred in plenty, with portions of other fossils of the Oxford clay, and he was convinced of the identity of it. Experienced geologists, however, to whom he communicated the fact would scarcely credit the tale; but at last they were convinced by personal inspection on the spot. Mr. Fisher suggests the following solution to account for this curious phenomenon: "The Oxford clay was, at the time of the fault, in a more ductile state than the intervening and more shaly Kimmeridge clay, and when the general subsidence took place, which occasioned the fault, it may have been squeezed up past the ends of the broken strata into the position which it now occupies."

So Weston, in his paper on the "Geology of Ridgway, near Weymouth," in the Quarterly Journal of the Geological Society for 1848, says "The subterranean result of this state of things [*i.e.*, elevation and subsidence] would be the fracture of the Oxford Oolitic stratum and great pressure on the subjacent Oxford clay. This would force up the Oxford clay from beneath through the opening thus made, that is through the very place where we find it between the chalk wall and the overturned upper surface of Hastings sands."

Weston shews that the Oxford clay at Ridgway is clearly not the Oxford clay stratum in its natural position, but a part of it

raised above its own level by local pressure. In a note he gives the following figures :—"The finished line of railway cutting is about 247 feet above the level of high floods at Weymouth, and the shaft sunk from the surface to the level is about 50 feet. Hence the Oxford clay at this spot must be about 300 feet higher than that near Weymouth."

The *Osmington Fault* runs also in an east and west direction, parallel to the Ridgway Fault at the distance of about $1\frac{1}{2}$ miles to the south. Its western termination is visible at Hamcliff. At Upton Hill horizontal chalk beds form the north side of the dislocation, whilst subsided chalk, green sand, and Portland stone form the south side of the fault. The Ringstead Bay Fault is of very minor importance, and is of very local extent, in fact it is a mere fracture in the section exposed in the cliffs, and has no effect on the chalk formation itself, and though no doubt it may be considered as resulting from the same cause which produced the larger dislocations, its effect is to bring a subsided mass of Portland sand and Portland stone into contact with the Kimmeridge clay.

The *Bothenhampton Fault* is a downcast fault occurring about one mile south-east of Bridport. It was apparently first noticed by Professor Sedgwick. It is of considerable depth, bringing the Forest marble on its south side into contact with the superior Oolite on the north side. The Forest marble dips at a considerable angle towards the fault. Its course is east and west parallel to the others, and in the eastern direction it continues to Shipton Gorge, Litton Cheney, and Long Bredy.

The *Bridport Fault* is a downcast fault in the cliffs a mile to the west of Bridport Harbour. The amount of disturbance caused by it is great. On its north side are beds of superior Oolite based on Lias ; on the south side are beds of Forest marble based on more than 150 feet of grey clay, which are violently turned up when they come in contact with the fault. The eastern extremity of the fault presents a complicated double fracture.

We must now, before bringing this matter to a conclusion, say a

few words about the anticlinal axis which lies before us between the chalk escarpment and the sea, and which is in reality one of the most important and instructive geological features of the whole district. This axis passes from Weymouth Bay to the Chesil Beach, and produces an arch-like disposition of the group of strata composing the valley or low ground in front of us. Forming the central line of this axis is the Forest marble, bearing on its shoulders the Cornbrash, the Oxford Clay, the Oxford Oolite, Kinimeridge Clay, Portland sand, and Portland stone in ascending order. These, under the influence of denudation, have been planed down, exposing the Forest marble in the centre ; therefore, in traversing the district in a south-west and north-east line from Portland Bill to Ridgway Hill, we find the strata repeat themselves on either side of this axis with wonderful regularity, complicated slightly, I admit, in one or two points by the occurrence of one or two faults near the northern outcrop of the Cornbrash. The forces producing this important anticlinal axis acted in a line continuous with that extending through Purbeck and the Isle of Wight, and parallel to the great axis of the Weald of Kent and Sussex. The question presents itself—When did these elevations take place, so important in the configuration and landscape of the south of England ? It appears, taking cognisance of all facts, that these lines of elevation were produced subsequent to the deposition of the London clay, if not, indeed, as there seems every reason to believe, subsequently to the deposition of the newest Tertiaries of the Isle of Wight.

Another axis of elevation in the south-west of England presents itself to our minds—that of the Mendip Hills, in Somersetshire, which, running east and west, cuts that county, as it were, into two halves, and this axis is parallel to our own of Ridgway. The Mendip axis has long ago been shewn to be older than the deposition of the New Red Sandstone ; but to Messrs. Buckland and de la Beche it suggested a valuable example of M. E. de Beaumont's theory, that lines of elevation on the earth's surface have a strong tendency to run in parallel lines.

It is difficult to leave this spot, so fertile with problems of geological science, without noticing other features which surround us on all sides. In Messrs. Buckland and de la Beche's surface map two patches of Tertiary strata are noted as survivals of a continuous bed which formerly covered the district. They are described as plastic clay, and are given, one at Ridgeway Hill and the other between Bincombe and Came Down. On Saturday morning I was shewn in the library of the Geological Society an object which would be of much interest to us present at this spot to-day. It was Buckland's pocket map of this district of South Dorset, in which the strata were coloured in with his own hands in days when published geological maps were unknown. When the shafts for the tunnel were sunk Weston states that 60 feet of Tertiary strata were passed through; hence the Tertiary survivals are much more important here than they were formerly supposed to be.

The Three little Circus-shaped valleys of Moignes Down, Poxwell, and Sutton Pointz offer examples of what were formerly termed valleys of elevation. They are of elongated oval shape, resembling a Roman amphitheatre, in which the outcropping edges of the strata would form the seats.

The terraced lines in the chalk valleys on the north side of Ridgeway escarpment are noticeable features, more clearly developed here than in many other localities. In the chalk country traversed by the railway between Boulogne and Amiens these terraces are very remarkable, the relics of a former era of cultivation.

Again, to the west, along a cart road, about half-a mile from the Weymouth Road, Mr. Cunnington, of Dorchester, found a very interesting interment in a half-demolished barrow a few years ago. But nothing now remains that is of interest.

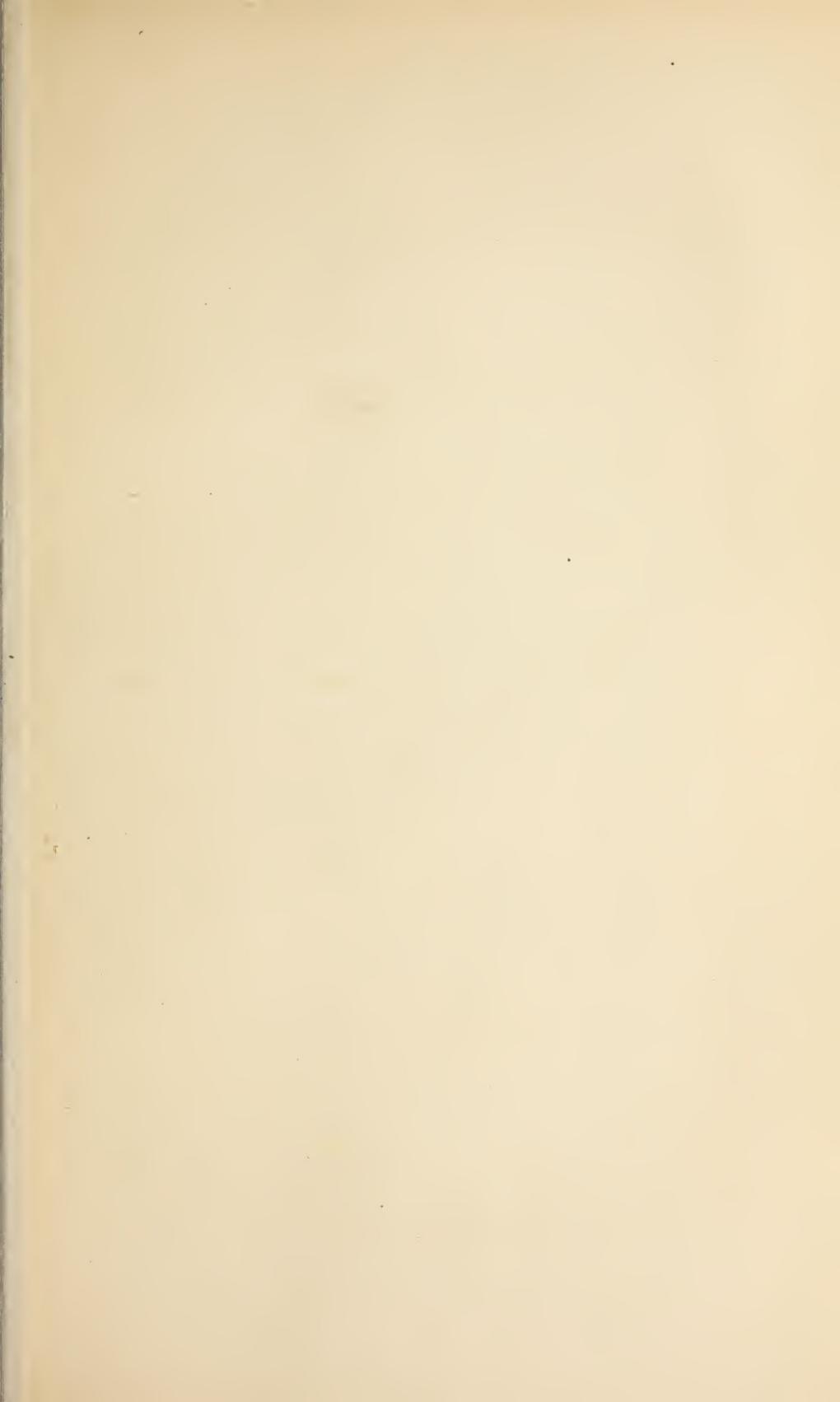
I have said nothing as to the origin of the word Ridgway:—That point must be left to one of the antiquarian members of our party. I must now bring the subject to a conclusion, and you probably will fully think the time has arrived for it. But there are reasons why one should linger here and find it difficult to part. The subject grows in breadth and importance as we become more

conversant with it : the book of Nature may be read and re-read many times before we comprehend its fullest teachings. And for a field day the spot is almost unique, so much lies close at hand beneath us, and this is again connected with so much beyond ; with problems attaching to the physical features of the whole southern districts of England—indirectly, indeed, to the whole world. One point we may carry away with us at any rate. It is this ; with all these fractures of the earth no trace exists on the surface to tell us what has occurred. The edges of this great fault have been smoothed down, the gaps filled up by the agency of denudation. This gives us an opportunity close at hand to estimate the importance of this great geological factor. To read of the removal from the surface of a district of so much solid matter, by the agency of running water aided by variations of temperature, may be a matter which may strike us or not according to the mood we are in at the time. But the surface of the ground traversed by a fault furnishes incontrovertible evidence. Here, looking across the district, where we are told of the existence, and where we could, if we chose, prove the existence, of a great dislocation of the strata beneath us, which has brought the beds on one side several hundred feet higher, possibly than they would otherwise have been ; when we see not one trace of the catastrophe on the surface of the country, as we look superficially across the landscape, we must recognise the importance of that ceaseless agent of geological change—denudation. And then, again, we may consider what was the catastrophe which produced this great dislocation ? In the recorded instances of earthquakes the areas affected have been vast, the devastation resulting appalling, the loss of life terrific, but the influence on the earth's crust seems comparatively slight. Instances have been recorded of the elevation of large tracts of land some feet relatively to the sea, as in New Zealand, by Sir Charles Lyell in the Principles of Geology, and by Darwin in his Voyage of the Beagle of the land round the Bay of Conception in Chiloe raised two or three feet, whilst at the Island of St. Maria, 30 miles distant, the elevation was

greater. So, too, in the great eruption of Krakatoa, in the Straits of Sunda, in August, 1883, the most appalling results were produced with which we are familiar in modern times. It appears that the explosion, which resulted from an inrush of sea water into the crater of the volcano during a period of great activity, rent the crater of Krakatoa in two parts, of which one part remained, whilst the other entirely disappeared, and that the spot, where once was the apex of a mountain, is now covered by the sea to a depth of 164 fathoms.

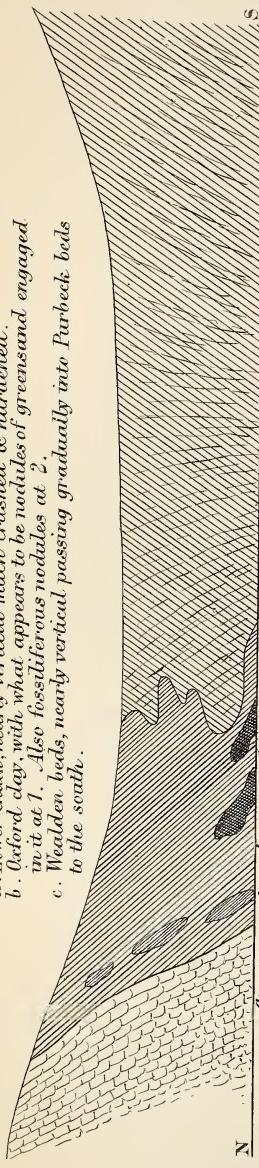
In what way, then, was this great effect produced, which, resulting in the upraising of the anticlinal axis of Weymouth, Purbeck, and the Isle of Wight—and parallel to it the axis of the Weald—comprised the fractures of the solid crust, of which the Ridgway Fault is amongst the chief?

In February last I made a visit to the Ridgway cutting, accompanied by Mr. H. J. Moule. We walked from Upwey station to the tunnel, and in this way approached it from the south. The bold face of the chalk escarpment seen from this side is very striking, and the outlying patch of Eocene sand and gravel on the top of Ridgway Hill forms a very noticeable feature in the landscape. The materials composing this survival of the Eocene beds have been extensively quarried for economic purposes, and the steep yellow coloured sides of the gravel pits form a strong contrast to the more undulating surface of the surrounding chalk. The railway crosses Ridgway Hill by means of two tunnels with a cutting between them, the short tunnel to the south and nearer Weymouth, passing chiefly through Purbeck beds, whilst the principal tunnel, nearer Dorchester, is excavated through the chalk. The sections lying between the two tunnels are now almost obliterated owing to the growth of vegetation upon them, whilst the dip of the beds can scarcely be estimated since the surface soil has been washed down from above to such an extent as to render the identification almost impossible. Clay appears to occupy a large portion of the space, but intermingled with the beds of clay there occur bands of sandy character, dipping towards



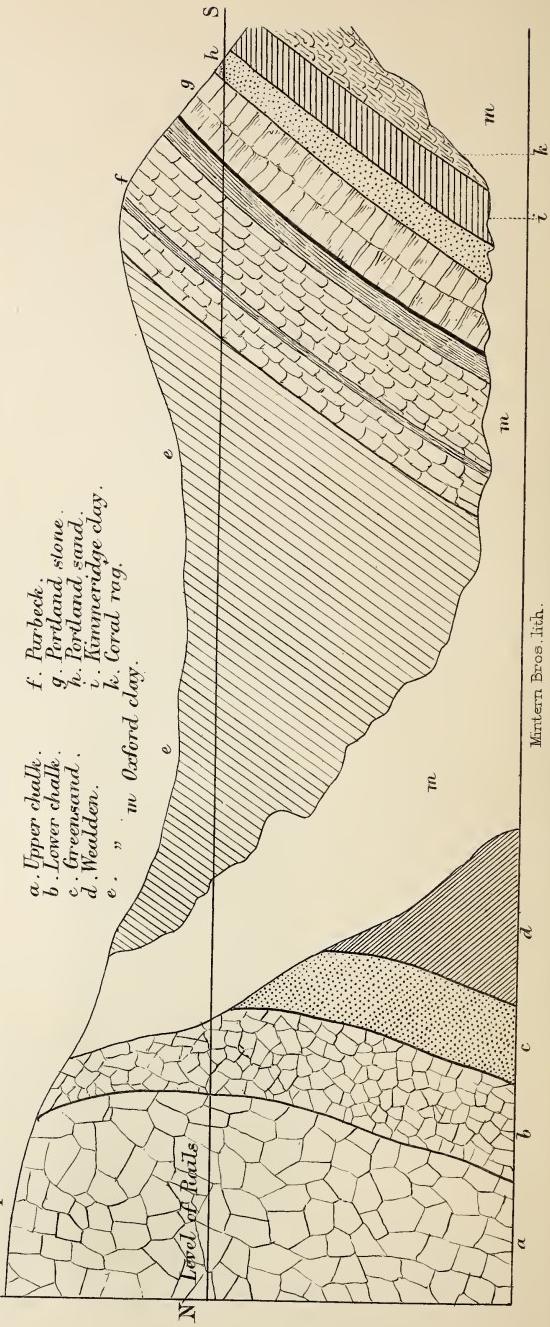
Section 1. p. 37.

- a. Lower chalk, nearly vertical, much crushed & hardened.
- b. Oxford clay, with what appears to be nodules of greensand engorged in it at 1. Also fossiliferous nodules at 2.
- c. Wealden beds, nearly vertical passing gradually into Purbeck beds to the south.



During May 1849 the section appeared thus:- The curious irregular line (d) is the junction between the two clays which appeared very well defined.

Section 2. p. 32.



SECTIONS OF THE RIDGWAY FAULT AFTER THE REV. O. FISHER.

Mintern Bros. lith.

the south, and making themselves apparent by their yellow colour, by the paucity of vegetation growing upon them, and by beds of sandy ferruginous rock occurring amongst them. There seem to be three principal beds of brown or yellow sand or sandy clay in the sides of the cutting between the two tunnels, the rest of the ground being occupied by stiff blue or brown clay, the distance covered by the whole section being not more than 200 yards.

Thus, starting from the Purbeck beds at the northern mouth of the south tunnel, we find

From	0—70	yards	...	Yellow sandy clay, forming a heavy soil, with willows and boggy plants growing upon it.
„	70—120	„	...	Blue clay, covered with grass and sedges.
„	120—150	„	...	Yellow sand. Blue clay, covered with willows and brambles. Red and yellow sand,
„	150—170	„	...	Blue clay, with large nodular lumps, covered with grass.
170—N. tunnel				Chalk.

Of the three plans which illustrate this paper, two were drawn by the Rev. Osmond Fisher for "Barnes' Guide to Dorchester," before mentioned, whilst the coloured ground plan is copied from the model which was constructed by Mr. Fisher, and is now in the County Museum at Dorchester. This drawing was made for me by Mr. Moule, the Curator of the Museum, to whom I owe my best thanks.

In conclusion it may be remarked that the solution offered by the Rev. O. Fisher to account for the curious position occupied by the Oxford clay disclosed in these sections at the Ridgway tunnel is not entirely unique. Thus Professor Ruskin, when writing on the influences which have produced the present external forms of the Stratified Alps of Savoy, says: "An important result of denudation has been overlooked—viz., when portions of a thick bed have been removed, the weight of the remainder would squeeze

and press the beds beneath into all kinds of anomalous positions, like those of the floors of coal mines, termed by miners creeps." The Ridgway Fault has evidently played a conspicuous part in the production of the present landscape of the district, and this is rather exceptional. It appears from observations that faults seldom influence the present contour of the land's surface to any large extent, though we might have naturally assumed the contrary. Mr. Mellard Reade quotes the Great Craven Fault as one of the few instances in Great Britain where this is the case. "Here," he says, "in Giggleswick Scar, we have on one side mountain limestone of several hundred feet in height, forming what I would call a fault escarpment, worn back by denudation to so small an extent that the great fault cuts the foot of the scar, and in the valley we have millstone grit lying against the limestone." (See "Origin of Mountain Ranges," p. 80). "As a rule," he continues, "the sides of a fault are planed down so as to obliterate the fault as a feature of the scenery." This leads him to conclude that, compared with the numerous dislocations of the carboniferous strata, the Craven Fault is of modern date. This gives additional interest to the Ridgway Fault.





Notes on a Minute Book belonging to the Corporation of Dorchester.

By H. J. MOULE, M.A.



WITHOUT any saying of mine it is, doubtless, well known to all here that there is curious reading in most old minute books. From incidents that may aspire to be called touches in the historical picture of old England down to the former prices of petty wares, our gatherings from these records have a strange interest. It is always so, I think, when we get at facts sideways—from documents indited with no shadow of a thought of history writing. But it is not easy to import the said interest into a paper, for the points which arrest attention are mostly microscopic, catching our notice by number rather than individual importance. However, I must do my best. The minute book in question, C8 in the catalogue, is a small unbound paper folio. In dignity of appearance this and our other 17th century minute books are altogether put into the shade by two grand ones which they have at Weymouth. But our shabby little volume is good reading in some parts. It begins with July 15th, 1629, and ends with October 6th, 1637. I have culled bits under several heads :—

1. A few Christian names have been noted as somewhat odd—*e.g.*, of men, Patroclus, Troilus, [S]cipio, Angell, Allamort, Pasque,

Reynaldo ; of women, Ibbert, Windfrint, Thomasyn, Ursula, Charitie, and Christian. These two last occur among names of scolds, by the bye.

2. Mention of trades and handicrafts, tending to show the greater distribution of them over the land, and their being shared by more people in any one given place then than now—in a word proving that centralisation had begun but little, if at all, in the 17th century. It seems noteworthy that there was a bookseller here as early as 1630, a bookbinder in 1637, and a plumber in 1633. About the same time there seem to have been here no less than 18 “maulters.” Here are callings, either for the most part of Dorchester people, or of people coming here intending to work :—Broadweaver, inkleweaver, tucker, clothier, woolstreaker, feltmaker, lacemaker, quishion (cushion) maker, seevier (sieve maker), parchment maker, trussmaker, gunner, gunpowder maker, card maker, tobacco pipe maker, pewterer, “glaseman,” the last from Pottern.

3. Connected with the last section we may note the rules as to change of abode 200 years ago. Firstly, no man might move into a town without a certificate granted at his last abode, or without evident means of support or a guarantee from a burgess of the town he comes to that the incomer shall not be a burden to the same. Secondly, the new comer must become a freeman of the borough or he cannot do commercial business there. A bargain where both parties were non-freemen is worse than void. If I am of Weymouth, come to Dorchester, and there buy goods of a Sherborne man, those goods are “foreign bought and sold,” and are forfeited to the freemen of Dorchester. At fairs and markets, however, I suppose that non-freemen might pay toll for a standing and then sell to all comers during fair or market time. I give a few extracts showing the jealousy against intruders, On April 26th, 1630, Jarvas Piper, feltmaker, was sent to prison for 21 days for coming to Dorchester without a “testimoniall.” On May 17th, 1631, it is minuted that Christopher Baker, twelve years a scholar of Trinity College, Oxford, has wandered about for years getting aid from scholars and ministers. Here “he went to the schoolmaster of the towne and

Usher and so to Mr. White's house for relefe, but had none at all." He was promptly sent back to Oxford, his birthplace. This University vagrant was not unique. On May 23rd, 1634, Israel Smith says he was of Magdalen College, Cambridge, which he left "without a passe from the house," went to Paris, Flushing, and thence to "Brighthemson." He asserts that he is a baronet's son of Nosley, in Herefordshire. All this did not save him from being "punished and sent away by passe to Nosley." "Punished" means whipt, I think, for on March 27th, 1636, J. Guest, "glassemnan . . . grey haired, of the age of Threescore yeares," was whipped and sent from parish to parish to "Paterne (Pottern) neere the Devizes." I do not see what was the fate of another wanderer in March, 1637. This was Gulielmo Clarvillo, a Florentine, professing to be an M.D. of Trinity College, Cambridge, and also a member of the University of Padua. The severest punishment for vagrancy noticed by me was on January 1st, 1629-30, when a woman convicted of being a "vagrant roague" was "burnt with R" on the left shoulder.

4. Punishments, a subject somewhat forestalled in Section 3. Unceasing efforts were made against drunkenness. It almost seems that to give a mug of beer to a friend, either in an alehouse or even at home, made you indictable for "tippling." On September 18th, 1629, Nicholas Maunders, "for typling in his own howse" with two widows, is "to be distrayned for 3s. 4d." On May 19th, 1630, Anthony New, ordering one cup of beer in an alehouse, intending to give it there to H. King, they are fined 3s. 4d. each, "or els to sit by the heeles." And note that the two fines would then buy half a hogshead of best beer. Then, as to drunkenness itself. On June 26th, 1632, Robert Foot, for being "severall tymes drunke and wishing that fire and brimstone would fall on this towne, it being sufficiently proud," was ordered to prison "to be sett close to worke w'th out liberty of coming into the towne." From this and another expression imprisonment seems usually to have been alleviated by occasional outings. Again, on March 16th, 1631-2, Alice Cox, convicted of drunkenness, "forborne for

a week, being unfit then to be stocked and since was stocked." The fine for drunkenness was 5s. Swearing was a crime strictly punished. On January 12th, 1630-1, "J. Cobb, for swering and corsing, is adjudged to pay 4s. or set by the hilles" (heels) four hours. On May 29th, 1632, for two oaths, a man was "set in stock ii seudall tymes iii hours at a tyme." Suchlike entries are countless and the nature of the oath is almost always given. Only once is it in the phrase which has earned us an ugly nickname abroad. On January 9th, 1632-3, "W. Hardy, gentleman, dwelling ewy where (so he said)" called the constables "a company of dampnd creatures. . . ." The next class of offence is not indictable now. It would almost seem that so recently as the 17th century the curfew conveyed a rule about "early to bed," not lightly to be disregarded. On November 28th, 1632, W. Sims, found between eleven and twelve at night at Robert George's, where he had supped and then "dranke two pipes of tobacco and dranke some beere yt was left at supper" was committed to Sessions to answer for his night walking.

Before passing on to another class or two of offences I give a few bits just to show the kind of crimes recorded, and that punishments, severe or lenient, promptly followed. On April 24th, 1634, Edith White, of Fordington, begged in Dorchester. Better not. She was "whipped and sent to Fordington with a passe." On June 24th, 1634, three men were charged with making "a bonne fire on Mdsomer Eve in a very dangrouse maner betweene the 2 dye houses and the furse rikes at Glippath Bridge." On August 1st, 1634, Charity Robinson and another for stealing field beans "were adjudged to be whipt and yt was doen accordingly." On December 20th, 1634, a man was fined 6s. for drunkenness and swearing, "but being very sorufill and submisste Mr. Maior was pleased to give him back 3s." Witchcraft crops up. On January 27th, 1633-4, Richard Shory was summoned "for saying that John Merefild was a witch and he having a moate in his hand and said he had fetched it from the witches howse, and he put it into the fire and said he would see if the witch would come,

and thereupon went to the window to look for him as this ext believeth . . ." Again, on July 28th, 1634, a woman says that Margaret Adyn had given a cake to her daughter, who was never well after. The woman "had a jelosy that Margerie had bewitched her daughter." So "she fetched thatch of Margerie's husband's howse and was burning it . . . and the said Margerie's husband came in the whiles and scolded at her for it." This partly resembles a Roman spell. Another offence noted is sleepiness among the watchmen. One bit irresistibly recalls the immortal charge to the watch in "Much Ado about Nothing," Act III., "I cannot see how sleeping should offend ; only have a care that your bills be not stolen . . ." says Dogberry. Now, on August 21st, 1629, this very mishap came to pass. A watchman dropped off to sleep, some graceless varlet stole his bill, and actually pawned it for drink—"had drunk threepence upo the bill." A crime not heard of now, I think, was common here in the 17th century—stealing corn from the fields. On August 30th, 1630, a girl is charged with taking "loading of a titling pook of barley" at Frome. W. Butler seems to have stolen wheat wholesale at Waterston. He "caried xii. sheaves at each burden." This seems to show, by-the-bye, that sheaves must have been then much smaller than now. On August 16th, 1636, Renaldo Knapton, gentleman, deposes to seeing a man steal a sheaf "out of a wheate rike in Fordington Field." I note this partly in order to observe that this uncommon Christian name re-appeared in the family 100 years after. St. Peter's treble was cast in the presence of Renaldo Knapton in 1734.

I now touch on another class of crime not now exactly actionable. Scolding was an unpleasantly risky habit in the 17th Century. On January 29th, 1632-3, four women having "spent the most pt of [two] daies in scolding . . . It is ordered they shall be plounced." And it was no make believe ducking. On May 23rd, 1634, three scolds are ordered "to be plounced thrise apeice under water this present afternoone which was done accordingly." Considering the January plouncing above the thoughtfulness of the following

is touching. On May 6th, 1361, "Mary Tuxberry, for scoulding at the sergeants when they did goe a bout for mersements is ordered to be plounced when the wether is warmer." The ducking was done by means of the ducking stool, doubtless. Of other penal apparatus the stocks are constantly mentioned, the Pillory very seldom. On November 8th, 1632, H. Kippin, of Ringwood, "colier" (dealer in charcoal) was to be pilloried for giving short measure, but for some reason was let off. Again, there is a class of indictments for playing games on Sunday, or unlawful games. On March 9th, 1632-3, six young scapegraces spent several Sunday hours at "Berratt's Hill," and (of all places) in a close of Master White's at Frome, in playing nine holes and five holes. Their faults were alike, their fates diverse. Two were "stocked," two fined, two "whipped in hall." On October 12th, 1632, W. and Nicholas Bankes were presented "for playing at unlawful games;" but were "spared till they offended againe, being it was but at Corfe on Whitson Monday." To this day football is part of an ancient chartered custom on Shrove Tuesday at Corfe Castle. Perhaps that was the illegal game there on Whit Monday, 1632. Some anxious mothers would, I think, vote for a law against it now. But the milder game of fives seems also to have been unlawful. Played it was, truly, against St. Peter's tower, but it does not appear that it was the sacred locality that made the unlawfulness. Nay, is not an interbuttress space of Eton Chapel the model fives-court at this present moment? "Keeles," which I think was skittles, was illegal apparently, although on one occasion played at the "Mill Hams" by Sir F. Ashley, a very leading man in the borough and county.

Crimes and punishments have occupied us long, yet there remains a class which it is impossible to omit—viz., that comprising cases connected with religion. On this head this and (I think) other Dorchester minute books have been quoted by Mr. Roberts in "Social Life in Southern England." But he has given only a few passages out of many; so I feel bound to take up this risky subject. Please be assured that my strong wish is to exclude all

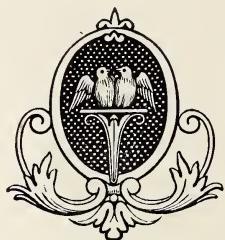
bias from my notes. At the time under our view Puritanism virtually, although not yet legally, was dominant here. Now I am the last man lightly to condemn, or over exalt, the party of which were Baxter and Bunyan, Peters and Barebones. Further, is it not likely that if Ambrose had been rector of Trinity, and Augustine of All Saints, they would have been snarled at as much as were Master White and Master Ben? "Those are Papist laws"—"A Chard drunkard is more to be believed than a Dorchester Puritan"—such recriminations recall "I am of Paul and I of Apollos." I now give a few bits showing how the 17th differed from the 19th Century in the treatment of religious delinquencies. On January 17th, 1629-30, Hugh Baker, for leaving church before prayers were over, was put in the stocks for two hours. Excuses were not lightly allowed. On February 26th, 1635-6, J. Gray was fined 1s. for absence from St. Peter's, although "he allegeth" that he was visiting his sick mother at Monkton and went to church there. On October 12th, 1632, Ursula Bull was fined 1s. for absence from church, although "she saith she was amending her stockings." I fear that the Bull family were not exemplary, for on February 4th, 1631-3, Elizabeth Bull was "charged . . . to be an ordinary dpter before prayers endd at All Sts." On November 10th, 1634, J. Colleford, an absentee from church, and with other faults, "is to be whipt in the hall psently in the view of his Mr. or else his Mr. is to do yt himself there right." Here follows a puzzling extract. On January 2nd, 1634-5, J. Hoskins went out of church before the end of service and entered a neighbour's house to warm himself. Then he went to "Broad Close" to serve cattle, found a bull, put him into pound, baited him with a dog, then went to church, but late. Now the odd thing is that the very secular midday amusement is unnoticed, but John is fined 1s. for absence from church, where he had twice put in an appearance, although short. The pleasing duty of noting and presenting absentees appears to have rested on the churchwardens, who seem to have been thought sometimes guilty of favouritism. On April 24th, 1632, Elias Fry told by Churchwarden Williams, of All

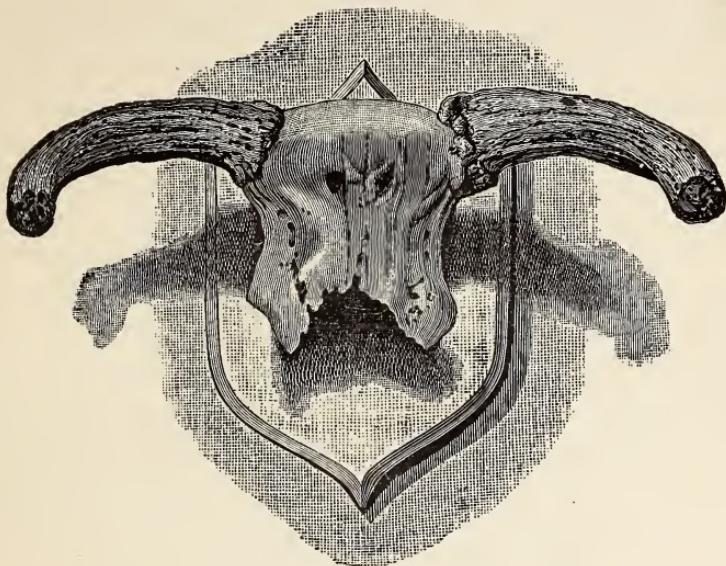
Saints', that he was presented at Blandford Court "for his sleeping and disorderly behaviour" in church "awnswered yt the churchwardens could see him and such pore men to present them, but could not see rich men to present them," finishing off with a fine ringing of changes on the epithet "knav." He was not the only disorderly one among the compelled worshippers. On October 7th, 1630, E. Miller, for playing in church is to be corrected by his master, "and Constable Williams might see it well done." On August 29th, 1631, it is deposed that "Jo Kay and Nicholas Sims did play att All Sts.' in time of sermon and laughe, and Sims did stick Kay a box on the ear and cary themselves very unreverently for wh they were committed to prison." On February 13th, 1631, two brothers confessed that they "boxed 3 or 4 blows" in All Saints." Out of church, too, a little rebellion about compulsory worship occurred, and naturally took the form of enmity to the incumbents. Master Ben, rector of All Saints', was a worthy man, as I am assured by a friend who has studied the Puritan epoch well. So blame of him must be taken "cum grano salis." On May 5th, 1630, a man is accused of saying that Master Ben did not preach through illness brought on "because he had no more offering at Easter." Another "sayd Master Ben did rate or rayl in his sermon," on a certain occasion. Again, on May 4th, 1631, M. Martin is charged that he "brake into speche of ministers and lawyers, that they had gotten all the riches of the land and will not vouchsafe to speake to a pore man that he would not "put off his hat unto Master Ben any more" that Master Ben "did not reade the Epistles nor Gospels and did not use to salut [his neighbours] wh his hatt but look over them with a great p of eyes." On December 19th, 1629, Stephen Pressly "did very abruptly brake out into speche" in a like tone. He doubted right to compel attendance at church, would have the canons consulted, would by no means stay beyond "Divine service"—"would make good that Jo Downto, of Fordington, would preach as well as Mr. Ben"

Then about Master White. He is an historical character, a man

who for no slight reason, surely, earned in his day the title “the Apostle of the West,” and down to our day is the object among some New England families of a cult almost like that of a Greek hero town-founder. But backbiters spare none. On September 15th, 1630, Anne Samwayes is accused. She “did speak unseemly words of Mr. White—viz., that he did starve the country, and did coyne with the divell for mony, and would be a merchant and fearmar for his pfitt, and did send pvision to New England in a color to convey to Spayne, and many other unseemly words for a quarter of an-howre space.” Oddly enough in this book we find he did farm, and small blame. At least we read of two “closes” (pasture fields), and of a hay-rick of his. And on August 26th, 1635, Nathaniel Bower, deposing about a collision with the watch, speaks of “working with Mr. John White, clerke, helping in corne” until midnight. On February 8th, 1630-1, Phillip Nycholls is accused, partly by a Jesuit, a “Seminary,” of very fierce criticism of Master White’s doctrine. Those curious indictments might be added to, and other branches of the subject might be taken up, especially scattered touches about emigration. But already this is what the Scots call “an ower lang screed.” It is so easy to run on while conning these minutes and looking at the mind-pictures that come and go at every other page almost. There’s the good widow before Master Mayor for absence from church, but excused in that she was “bringing going” her late husband’s apprentice boy to Monkton ditch, on his way to Weymouth to take ship for New England. There is the hot headed fellow longing for his crossbow (how the word carries one back) to teach the constables due distance. There are the fiddles and dancing, of all places, in the grim precincts of the gaol. There’s the thatched house just by in High-street, and others up and down the place. Yes, but take it all in all, a vastly more interesting, vastly more picturesque a place it is that fancy shows us than sight shows us now. Trinity Church, indeed, poor—All Saints’, poor; as rebuilt after the 1622 fire. But what houses, what gables, what outside galleries—what quaint variety in this old borough, whereof a hundred and fifty

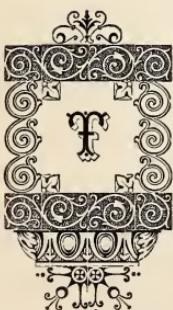
years after Madame D'Arblay said it was the most antique looking she ever was in ! It is quite wrong—an exploded error—actum laudare tempus. Yet somehow I should dearly have liked to have seen that long improved away Old Dorchester.





Bos Primigenius, with Relation to Palæolithic and Neolithic Man.

By J. C. MANSEL-PLEYDELL, Esq.,
F.L.S., F.G.S.



HE Neolithic age to which *Bos primigenius* (*Urus*) belongs, equally with the Palæolithic, succeeded the latter in point of time; between them a considerable lengthened period intervened; they had nothing in common with each other, the break was complete; their implements differed, as did most of the animals they hunted and upon which they fed, several of which are extinct, while others have disappeared altogether

from Europe, and now live either in the Polar or in the Equatorial regions, as the reindeer in the first case and the hippopotamus in the other. Fragmentary as are the relics of the Palæolithic age, we are able to arrive at certain conclusions as to the condition of man and his mode of life at that period. Although he had attained to a certain amount of artistic perfection he was entirely ignorant of the potter's art—for no fragments of pottery have ever been found in their cave dwellings. Fragments of bone, ivory, horn, and stone exhibit outlined and even shaded sketches of various animals, representing fish, seal, ox, ibex, red deer, Irish elk, bison, horse, cave-bear, reindeer, and the mammoth ; of these there are sculptures also. Pieces of iron-ore found with their remains are supposed to have been used as pigments for painting the body. Among the mammalia he encountered, were the lion, hyæna, elephant, mammoth, hippopotamus, rhinoceros, bear, musk-sheep, glutton, reindeer, ibex, urus, bison, and others. The character of Europe was very different then than it is at the present day. The German Ocean was an extensive plain, and England was joined to the Continent ; vast herds passed over on migration from north to south. The rivers had not then cut their channels so deeply as at present ; they were much larger, and especially so in times of floods, which inundated the caverns of the limestone districts with mud. The coast of Europe did not extend much further west than at present, and the influence of the Atlantic prevented strongly contrasted seasons. The fauna and flora not only comprised northern and temperate, but also well marked groups of southern forms. France, Belgium, and Britain formed then a neutral zone, the Mediterranean animals and plants got no farther northwards than the Rhine, which formed no barrier, however, to the migration from the north, which passed on to the south unimpeded. The Arctic fox, Polar bear, lemming, and reindeer have been met with in the same caverns and river-gravels with the hippopotamus, lion, and *elephas antiquus* in every stage of life. M. Lartel, speaking of the district of Perigord, says among the antlers of reindeer which are

still adhering to the frontal bones of skulls, broken open to get at the brains, there were some not 15 days' old (with reindeer the antlers begin to show at a much earlier date than in other deer), and of every age of development, also remains of skulls belonging to individuals that were shedding their horns. Again, Dr. Nehring, speaking of some German deposits at Westergeln, mentions very young examples of mammalia, jerboa lagomys, rhinoceros, and several horses (wild). In the Brussels Museum are preserved foetal skeletons of the mammoth and the bears; and, lastly, Dr. Woldrich mentions finding remains of lemmings, arvicolæ, and horses of all ages, which would preclude the possibility of long migrations, and as these mammals bring forth their young in warm weather they must have occupied the country during the summer. We find animals and plants which now live in different climatal zones living together in pleistocene times. Mr. Howarth, after passing in review a series of facts in connection with this subject, sums up by saying that Europe during the Mammoth age was divided into three zones, differing in climate and productions; one comprising its northern parts, and Switzerland, covered with glaciers and practically sterile; the second comprising the uplands, with a climate probably similar to that of the Oberlands, of the Urals, and of Central Sweden, largely occupied by grassy prairies and pinewoods, and inhabited by mammals and birds of high latitudes or mountain fells; and, lastly, the river valleys, sheltered and luxuriant, were filled with forests, which in France and Western Germany were of a very diversified character, many of the trees requiring a warm summer temperature. In these forests, and near the rivers they shaded, lived the mammoth and its more close companions, woolly rhinoceros, glutton, &c., like itself denizens of the woods, and capable of surviving some vicissitudes of food and climate. The sea-bottom between the coast of Norfolk and Dunkirk teems with the remains of Mammoth in a way which is not known in any other part of Europe, and from the fresh character of the bones it is shown that they lie where the animal died. Ireland was then

joined to Scotland and the Isle of Man, so that the land was much above its present level, and at least 30 fathoms higher. Not only was the land of Europe generally higher, but the shores of the North Sea and Atlantic were then washed by cold currents instead of the warm Gulf Stream, which did not then reach the shores of Britain or of Norway. Palæolithic man dismembered the game that they killed, and carried to their cave-homes only the choice pieces, such as the head and limbs; they valued the head for the brain and tongue, and possibly for the teeth, the limbs for their flesh and marrow. They were able to kill the elephant, rhinoceros, lion, and bear, and could also capture the chamois and wild goat. As many as 135 species of mammals have been catalogued as contemporaneous in Europe and Northern Asia with the mammoth and Palæolithic man. They include nearly all the species now inhabiting those countries, of which some, like the mammoth, are extinct, others locally so—that is, existing beyond the European territory. Of the latter, some, like the musk-ox, have retired to the extreme north, while others, like the hippopotamus and hyæna, have retreated southward. The great subsidence of land closed the Palæolithic age, and with it disappeared several of the large mammalia. The modern gravels, earths, and loess spread over hill and dale far above the reach of present floods must have been brought about by an unusual action of masses of diluvial water. “The loess, which Sir C. Lyell calls inundation-mud, is the last and latest of all the great formations known to geology, and covers a large part of Central Europe. The shells it contains are terrestrial land-shells of damp woods, and morasses of a land-surface which had been covered with this inundation-mud, the result of a great depression and a re-emergence of the land towards the close of the glacial epoch.”—Duke of Argyll, *Contemporary Review*. This inundation, flood, or deluge, which was connected with the disappearance of man and many of the large animals of that period, was followed by the appearance of Neolithic man with modern animals, whose descendants still survive. It extended up to very high levels all over the old

Continent from England to China, and apparently over Northern America as well. Such a catastrophe occurring within the human period may well be as Lenormant calls it in his "Beginnings of History," the "most universal of all the traditions which concerns the history of primitive humanity." Professor Prestwich, who is one of our greatest English authorities on pleistocene geology, places the close of the glacial period at a comparatively recent date, and claims the authority of history with regard to the antiquity of man.

The above cases of Palæolithic man are European, and far removed from Western Asia, the historical centre of the human race. Hœckel, whose views on evolution are very extreme, traces the affiliation of man from the regions of the Persian Gulf, the shallow parts of which were dry land in the human period at the close of the Pleistocene age, but he places the primitive abode of man further south, supposed to be submerged under the Indian Ocean ; but of which our fellow-countryman Wallace, also a strong evolutionist, shows there is no good evidence. The Biblical account assigns the seat of man to the neighbourhood of these very regions—the southern part of the Babylonian plain and within reach of a mountain district abounding with mineral products. It has already been shown that Palæolithic man had no domestic animals and was dependent upon wild game for his food ; the Bovidæ he encountered were the aurochs or bison, and urus ; the former being now only found in the Lithuanian forests. The latter is supposed to be the ancestor of the degenerate white cattle with red-tipped ears of Chillingworth Park. The Cambridge Museum contains a skull of one of these gigantic oxen in which a flint is deeply sunk into the frontal bone, perhaps inflicted in a deadly combat with a brave Palæolithic man.

When we first meet Neolithic man we find him surrounded by a group of animals differing in no respect from the present European fauna. He excelled his predecessor in every respect except in art. His relics have been met with in much greater abundance and over a vastly wider area in Europe. The remains of Palæolithic man

are restricted to caves, and to a few alluvial deposits in France and the South of England, in which they occur more or less numerous, whereas the weapons, implements, and ornaments of Neolithic times are found over the Continent of Europe. Professor Dawkins admirably illustrates the marked distinction between the Palæolithic man of the gravels and caves, and a smaller race with differently formed skulls which succeeded them in the later Stone-age, after the great subsidence which ushered in the modern Continental period. The latter race he identifies with the Basques and ancient Iberians—a non-Aryan or Turanian people, who once possessed the whole of Europe, including the civilized Etruscans of Italy, and allied tribes occupying the British Isles. This race, which was overthrown by the Celts and other invaders, was doubtless the successor of Palæolithic man, and constituted the man of the Neolithic period. Light is now rapidly breaking in upon this hitherto obscure subject. By the rediscovery of the tin-mines in Tuscany the connection of the Etruscans with the introduction of the Bronze age is established. The affinities of these people with the Neolithic and Iberian races connect the Stone and Bronze-ages in Europe, and explain their intermixture in some of the lake-dwellings in Switzerland. These show a progressive phase of civilisation in successive stages, through which the primitive inhabitants of Switzerland passed from the Neolithic, through the Bronze, into the Iron age. Professor Heer has shown that some of the plants cultivated by the lake-dwellers are not indigenous, but must have been introduced—such as the Egyptian wheat *Triticum turgidum* and the six-rowed barley, *Hordeum hexastichon*; also *Silene cretica*, a South European weed, which was probably introduced accidentally. In the heaps of refuse are found remains of wild animals which the lake-dwellers snared and hunted, such as the wolf, beaver, elk, urus, bison, stag, roedeer, bear, &c. The prehistoric period is characterised by the arrival of the domestic animals in Europe under the care of man—the dog, pig, horse, horned-sheep, goat. *Bos longifrons* (which, like Neolithic man, was small) and possibly also *Bos primigenius* reverted to a wild state

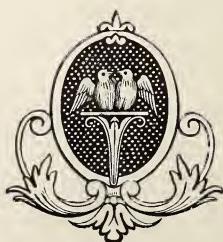
like the horses and oxen in America and Australia at the present time, for their remains are frequently found in association with animals undoubtedly wild.

The most important wild animals living in this country during the prehistoric period were the urus, the subject of this memoir (the gigantic skulls of which occur in the great bogs of England and Scotland), the Irish elk, the moose (*Cervus alces*), and the reindeer ; the two last are far more abundant in the northern deposits of Britain than in the southern. The prehistoric fauna is distinguished from that of the pleistocene not only by the appearance of these mammalia, which were unknown in that period, but by the absence of many species which were then living. The cave-bear, woolly rhinoceros, and mammoth for instance became extinct ; the musk-sheep, glutton, and lemming took refuge in the regions of the north, while the spotted hyæna, hippopotamus, and *felis caffer* retired to the warm regions of Africa, where they are still living. The few scattered herds of wild white cattle which still exist in parks in England and Scotland may be said to form a connecting link between the wild animals which have become extinct in this country in historic times, and those which may still be classed among our *ferae naturæ*. The weight of opinion favours the view that they are descended from *Bos primigenius*, the contemporary of Palæolithic man. No discoveries have as yet been made leading to the supposition that it had been domesticated in Britain in prehistoric times, while on the other hand *Bos longifrons* had been generally subjugated and used by man. It is now represented by the diminutive Welch and Scotch cattle, whose absence from England is one of the sad proofs of the ruthless extermination of the British by their Saxon conquerors, from which the few who escaped found refuge in the forests and fells of Wales and Scotland.

Among the relics from the Romano-British village at Woodcuts, preserved in General Pitt-Rivers' museum near Rushmore is a skull of *Bos longifrons*, to which urus was as superior in size and strength as was Palæolithic man to Neolithic. Although found

in prehistoric remains there is every reason to suppose urus was feral and had never come under the domestication of man as a pure breed. The postglacial mammals of England, exclusive of those which are indigenous, are the brown-bear, great Irish deer, elk, reindeer, urus, long-fronted ox, aurochs or bison, otter, beaver, wolf, wild cat, &c. Of these the brown-bear was a native of England during, and probably for some time after, the Roman occupation. The beaver had become scarce before the close of the ninth century. The wolf was extirpated in the north of England in the reign of Henry VIII. The reindeer, elk, and the great Irish deer probably became extinct in England in days long anterior to the Roman invasion.

The woodcut at the head of this memoir represents the skull of *Urus primigenius*, presented to the County Museum by Walter Fletcher, Esq. It was found in the year 1884, twelve feet below the bed of the river, by the workmen when excavating for the foundation of a new iron bridge at West Stour, over which the main road from Sherborne to Shaftesbury passes. The skull was associated with a large quantity of bones and trunks of trees, principally Wych elm.





Minterne: Its connection with the Churchills and Digbys.

A PAPER READ ON THE LAWN AT MINTERNE
28TH JUNE, 1888,

By Rev. H. E. RAVENHILL, R.D., Vicar of
Buckland Newton cum Plush.



MINTERNE was anciently in the parish of Cerne Abbas. In Domesday Book it seems to have been surveyed under the general name of Cernel. The Manor very anciently belonged to the Monastery of Cerne. Minterne Parva, in the Parish of Buckland Newton, adjoining, belonged to the Abbey of Glastonbury.

The boundary stone is in the ornamental water in Lord Digby's park. Whether the Abbots of Cerne and Glastonbury ever met in this beautiful dale, whether they fought over their respective rights, whether they feasted together, or hunted together, our great Dorset historian does not record, though he tells us the Abbot of Glastonbury had a park, and, we suppose, with it a hunting seat, on what is now the Castle Hill Estate.

The Manor of Minterne Magna belonged to Cerne Abbey till the dissolution of Monasteries, when it passed to the Crown.

5 Edward VI., 1552, the Manor was granted to the Warden and Scholars of Winchester College and their successors, to be held of the King in Chief by Knight's service, value £13 6s. 8d.

The property mainly continued in possession of Winchester College till 1864, when, after much negotiation and many difficulties, the copyhold was enfranchised by Edward St. Vincent, 9th Baron Digby, the present owner.

The Lessees of this Manor for several generations were the family of the Churchills. Roger de Curcille came over with the Conqueror. To pass on from the 11th to the 16th or 17th century, we have Roger Churchill, of Catherston, Dorset, marrying Jane, widow of Nicholas Meggs, and daughter of William Peverel, of Bradford.

They had a son Matthew, who married Alice Gould, daughter of James Gould, of Dorchester.

Their son Jasper (also called of Bradford, which seems to imply possession of some land at Bradford Peverel) married Elizabeth Chaplet, of Herringstone.

Their son and heir, John Churchill, styled of Wootton Glanville, studied law at the Middle Temple, and added to his estate. We find him at Minterne. In 1642 he had a lease of Minterne from the College of Winchester (Hutchings iv., 471, note). He died in 1652 at the age of 73.

He was grandfather to the famous Duke of Marlborough. He married Sarah Winston, daughter of Sir Henry Winston, of Standish Court, in the County of Gloucester.

He was married a second time. His second wife, Mary Allen, erected the monument to his memory in Minterne Church. He left a son called Winston.

This Winston Churchill was born at Wootton Glanville, and at 16 years of age matriculated at St. John's, Oxford (8th April, 1636); on the death of his father he left Oxford without taking his degree.

He married Elizabeth, daughter of Sir John Drake, of Ashe, in the County of Devon.

He was so great a sufferer in the Royal cause that his wife lived for some years at her father's seat at Ashe.

Winston was in the battles of Lansdown and Roundeway, as well as at the sieges of Taunton and Bristol, and was fined by Parliament £4,446. He was M.P. for Weymouth 1661, and on the establishment of the Royal Society was chosen one of its Fellows. In 1663 he was knighted.

He died 26th March, 1688, and was buried at St. Martin's-in-the-Fields. He was the author of the *Divi Britannici*, or History of the Kings of this Island. Macaulay, vol. i., p. 457, speaks of Winston Churchill as a poor cavalier knight who haunted White-hall, and made himself ridiculous by publishing a dull and affected folio, long forgotten, in praise of monarchy and monarchs.

Sir Winston Churchill had seven sons and two daughters. The eldest daughter was the notorious Arabella Churchill, to whose influence at Court is attributed by Lord Macaulay the Duke of Marlborough's first promotion.

The other daughter, Ellen Churchill, died at the age of 25, and is buried at Minterne.

In the 3rd edition of Hutchings a long note disputes the pedigree of the Churchills given in the earlier editions, and says the first of the Duke of Marlborough's family from whom we can trace his descent with accuracy is John Churchill, his grandfather.

Charles, the third son of Sir Winston, inherited Minterne. Why he did so is not clear.

The epitaph to the memory of Charles in Minterne Church records that "he was made Page of Honour to Christian, King of Denmark, when only 13. At 16 he was Gentleman of the Bed-chamber to the renowned Prince George. His martial genius led him to the wars, and his courage and conduct made him soon taken notice of by this Prince. He was made Major-General of Foot and Governor of Kinsale in Ireland by King William. He was esteemed one of the first commanders of Foot in Europe. Queen Anne made him Governor of the Tower of London and General-in-Chief of Foot. He had a great and memorable share in the

Battle of Blenheim, after which, for his many services, he was made Governor of Brussels, Colonel of the Coldstream Guards, and Governor of the Island of Guernsey. He died much lamented in 1714, aged 55. He resided the latter part of his life at Minterne. This General Churchill married Mary, daughter and sole heiress of James Gould, of Dorchester. He left no children. Two years after his death Mrs. Churchill married Montague Earl of Abingdon. She was left for the second time a widow.

In 1757 she was burnt to death in her *Town house* at Dorchester, which was burnt down.

Lady Abingdon probably resided a good deal at Minterne after her second husband's death, as the staircase at the east end of the house always went by the name of Lady Abingdon's staircase and a clear cold spring in the shrubbery as Lady Abingdon's well. She left the Minterne Estate at her death to one of her own relations, Nicholas Gould, of Frome Belet, near Dorchester, who, dying without issue 1760, it came to his elder brother, John Gould, of Upwey, Esq., on whose death it devolved to his son James, who sold it, in the year 1768, to the Hon. Robert Digby, brother to Lord Digby and Admiral of the White.

There is an old map of the house and grounds in 1724, by which the mansion appears to be as large, or larger, than at present. Hutchings records that General Churchill (brother of the Duke of Marlborough), who was in possession at the beginning of the last century, almost wholly rebuilt the house. The plan of 1724 cannot well be made out. There were steps on the east front leading down to terraces between the house and the water, which seems only to have consisted of square fish ponds. To the right or south of the terraces was an orchard and kitchen garden. The principal front of the house must have faced, like many other old places, to the north and east, as the stables, outhouses, and back yard were on the south side, where is now the flower garden.

The living rooms consisted, according to the inventory taken in 1768 (when Admiral Digby purchased the place), of common parlour, &c., the tapestry parlour (the latter, perhaps, the same

then as now, for the tapestry fits the walls very well), and the blue damask parlour. The present dining-room was probably what was called the Great Hall, as it has a stone floor, and till 1832 or 1833 it had a wide open fireplace with dogs.

General Churchill is said to have enlarged and improved the house very much. The tapestry in the drawing-room and two north bedrooms was a present to him from the States of Holland, when he was Governor of Brussels, as an acknowledgment for services he had rendered there. The tapestry in the bedroom (called the orange-room) has the Churchill coat of arms on it. The fireplaces of this and the adjoining bedroom are in the angle of the wall, a fashion which is said in Evelyn's Memoirs to have prevailed in the year 1670.

The ceiling of the principal staircase was painted by Sir Jas. Thornhill, and has the monogram M.C. at the corners. (Query, for Mary Churchill?) A handsome pier glass and glass table of old Dutch manufacture have both the same monogram, and also the Churchill crest. The glass on the table was cracked all across till 1864, when Lord Digby had a new one put in its place.

Tradition said that General Churchill had not been aware that he held the property under the College of Winchester, and that when he discovered that he was lessee only, not the proprietor, and a large fine on the renewal of a life was asked by the College, he dashed his sword with such violence on the table as to break the glass.

The offices at Minterne in 1768, besides kitchen, laundry, still-room, and servants' hall, contained a room called "The Warden's Hall," perhaps the place where the warden of Winchester College or his deputy settled the business of the estate at their annual visit, which they had the right of doing every year, in the month of May, during which visit they had also the right of going to the cellar and taking out any wine they chose—a privilege that so annoyed the Hon. Admiral Digby that he and Mrs. Dighy never dined in company with the warden on these occasions, but had their dinner upstairs by themselves.

According to an entry in the old journals the Minterne Estate in 1768 "was compact but naked, and the trees not thriving, the house ill-contrived and ill situated."

The Admiral, however, set to work immediately improving the place by planting about the house and on the downs. After the first year or two the trees grew well. The alterations were in general carried out with taste, with the exception of the buildings, in the matter of architecture. The Admiral had some very peculiar crotchets. Anything like an angle was to be avoided if possible. His corners were all rounded off, as may still be seen in the churchyard and in the farmyard wall at New Barn.

The Admiral pulled down the stables and offices (which, by the old plan, were on the south side of the house) and rebuilt them to the west of it. He added to the house itself the greater part, if not the whole, of the south front.

He also built in 1801 the tower at the west end of the church.

The alterations were all carried out under his own eye, and from his own plans, by the village mason at that time, Dowdy by name, which accounts for the walls and workmanship being of the roughest kind.

In 1836 the greater part of the passage at the back of the library was the store closet, lighted at each end by round windows, like the port holes of a vessel. This was altered a year or two afterwards by the second Admiral Digby. What is now (1888) the entrance passage, with the storeroom adjoining, was all part of the housekeeper's room, and on entering the hall door you had to pass straight on under the stairs through a dark archway into the stone passage beyond. There was a passage at each end of the library, both thrown into the room in 1866. In 1860 Lord Digby very much enlarged the house.

Admiral the Hon. R. Digby was called the old Admiral to distinguish him from his nephew, Admiral Sir Henry Digby. He was the third son of Edward Digby and Charlotte Fox (daughter of Sir Stephen Fox, and sister of the first Lord Ilchester and the first Lord Holland).

XO

CORRIGENDUM.

On page 95, line 14, for "great uncle" read "uncle."



97

Edward Digby never succeeded to the title, dying in 1746. His son Edward became sixth Lord Digby in 1752 on the death of his grandfather William, called "Good Lord Digby."

Edward Lord Digby was of a very amiable disposition and much beloved in the family. In Burke's "Anecdotes of the Aristocracy" he is said to have devoted his time to visiting prisoners in gaols. He caught the fever, from which he died, in so doing. His death took place at Balbyaville, the house of one of the tenants, near Geashill, where he was staying for shooting.

There is a portrait of him at Minterne over the door into the tapestry room, a copy of the picture at Melbury.

He was succeeded in the title by his brother Henry, who was created Earl of Digby, and was father of the second and last earl, and great uncle of the late Mr. W. G. D. Wingfield Digby, of Sherborne Castle.

Robert, the third son of Edward Digby and Charlotte Fox, was born in 1732, and entered the navy in 1744.

In 1757 he was in command of the "Dunkirk" in the action off Brest. In 1766 he appears to have been unemployed. His mother was very anxious he should marry, as she says in a letter to him, dated 28th October, 1766, "Have you seen nothing in all your travels this year pretty enough to tempt you to take a wife?" His travels and visits continued through 1767 and 1768. In the month of November that year he bought the Minterne Estate, but does not seem to have regularly resided here till after his marriage in 1784.

In 1778 Robert Digby commanded the "Ramillies," one of the leading ships in the inconclusive action between Orvilliers and Admiral Keppel in 1778.

In 1780 he was second in command in the battle off Cape St. Vincent. He was made Admiral of the Red and appointed to the care of Prince William Henry, Duke of Clarence (afterwards William IV.) on his entering the navy on board the Prince George in 1770. A miniature of William IV. as a midshipman is in the drawing-room at Minterne.

In 1784 Admiral Digby married Eleanor, widow of William Jauncey, Esq., eldest daughter of the Hon. W. Elliott, the Governor of New York. This Admiral Robert Digby died at Minterne in 1814. He was at that time Senior Admiral in the navy, which he entered in 1744.

He was succeeded at Minterne by his nephew, Admiral Sir Henry Digby, son of the Dean of Durham, father of the present Lord Digby by Jane Elizabeth, daughter of the Earl of Leicester and widow of Viscount Andover. Sir Henry was born in 1770 and died in 1842. A brass to his memory in Minterne Church records that he commanded H.M.S. "Africa" in the Battle of Trafalgar, that by his gallantry and daring he obtained the marked approbation of Lord Nelson and the thanks of Parliament.

Minterne has found its way into the pages of a modern popular novel. I think our Dorset Field Club owes a *thistle* to Mr. Shorthouse, the author of "John Inglesant," for having desecrated this beautiful spot with a murder two centuries back.

I have to thank the Hon. Miss Digby for the loan of a MSS. book kept at Minterne House, from which I have gathered the greater part of the information supplied to you to-day about Minterne and its connection with the Churchills and Digbys.

In the book I trace the handwriting of the late Lady Digby. Those who had the privilege of her acquaintance must look back upon it as one of the treasures of life. Her sweet spirit still lingers around Minterne, particularly in the picturesque cottages she was so fond of visiting in the days of her health, and in the village Schoolroom, which was, I believe, her design, and which you will pass on the road to Buckland.





The Parish Register of Buckland Newton.

By Rev. C. H. MAYO, M.A., R.D., Vicar of Long Burton
with Holnest.



T the request of the Rev. H. E. Ravenhill, R.D., Vicar of Buckland Newton with Plush, I have written the following short paper, to draw the attention of the Dorset Natural History and Antiquarian Field Club, on the occasion of its long looked for visit, to the valuable document in his custody in the form of the first volume of the Parish Register.

This volume is a beautiful book, in excellent condition and preservation, commencing on 16th January, 1568, and continued, with but few exceptions, until the end of the year 1812. It is a thick quarto, measuring 7ins. by 11½ins., bound in rough brown calf, containing no less than 594 paper pages, the margins ruled throughout with red marginal lines. The leaves are in perfect condition, though upon the re-binding of the book, at some date not known, a few of them have been misplaced, and the margins generally cut down. The various entries of baptism, marriage, and burial are intermixed, being recorded one after the other as they occurred, and from the beginning of the Register until 16th May, 1625, they are, with few exceptions, in Latin. After that date, and until 22nd March, 1694-5, the entries are sometimes in Latin and sometimes in English, according to the preference of the

registrar or incumbent; while from 1695 to 9th March, 1736-7, Latin is regularly used, at which last-mentioned date English obtains undisputed sway, and has not since been dethroned. There is one unfortunate defect in this otherwise well-kept Register. No entries occur between 29th June, 1625, and 9th February, 1653-4, except one in 1628. No reason can now be assigned for so unfortunate a circumstance, for, though it is often the case that registers were neglected during the civil war, this defect commences at a much earlier date. The cause must be sought in some special circumstance relating to the parish or incumbents, and it may be observed that the period of non-registration synchronizes in the main with the incumbencies of Charles Robson, inducted 22nd April, 1624, and his successor, Thomas Ridout, who was buried 21st December, 1654. It should be noted that from 1754 a separate Register has been kept for marriages, though a few of them continued to be entered in the old volume. With this exception the book comprises all the genealogical particulars relating to the inhabitants of this extensive parish for a period of nearly 250 years.

How Buckland Newton came to be possessed of a Register so carefully ordered is explained by the fact that in 1574 was instituted, as Vicar, John Phillipps, who had not long before (10th February, 1573), been appointed a notary public by faculty issued by Archbishop Parker. A copy of the document so appointing him, in which he is described as being of the Diocese of Hereford, signed "Willmus Larke ad ffacultates Regis'arius," is entered in the Buckland Register. He may be supposed to have had some legal training or attainments to fit him for this office, and if that is the case the effect is seen in the methodical way in which, a few years later, he carried out the Constitution of Convocation in the matter of Parochial Registers. In Burn's "History of Parish Registers," 2nd edition, 1862, pages 22 and 23, it is set forth that on 25th October, 1597, an important order was made by the Archbishop, Bishops, and Clergy of the Province of Canterbury, from which the following paragraph is taken:—"Deinde ut libri

ad hunc usum destinati, quo tutius reservari et ad posteritatis memoriam propagari possint, ex pergamens sumptibus parochianorum in posterum confiantur: Iisque non modo ex veteribus libris cartaceis transumpta nomina eorum qui regnante Serenissima Domina nostra, Elizabetha, aut baptismatis aqua abluti, aut matrimonii copulati, aut ecclesiasticæ sepulturæ beneficio affecti sint, suo ordine sumptibus parochianorum inscribantur, sed eorum etiam qui in posterum baptizati, vel matrimonio coniuneti, vel sepulti fuerint."

John Phillipps without delay set about carrying out this injunction in his own parish, and it is noticeable how much of the phraseology of the original order is reproduced in the title of the Buckland Newton Register, which runs as follows:—

“REGISTRVM SI-
VE DIARIVM NOMINVM EO-
RVM CONFECTVM, QVI BAPTIZATI,
ac matrimonio coniuncti, & sepulti fuerunt, infra paræ-
chiam de *BUCKLLAND*, in *Comitatu DORSET*, à decimo sex-
to die mensis *Ianuarij*, Anno Dom. iuxta computationem Ecclesiae
Anglicanæ: 1568. quòd in posterū ad posteritatis memoriam pro-
pagari possint, diligenter examinatum, transumptum, & fideliter scrip-
tum per *IOHANNEM PHILLIPPS*, Clericum, Notariumqz Publicum,
Vicarium Ecclesie parochialis de *BUCKLLAND* predictæ; Anno
Dom. 1598. Regniqz Illustrissimæ in Christo Principis ac Do-
mino nostræ, Domine Elizabethæ Dei gratia, Anglie,
Francie, and Hibernie Reginæ, fidei defensoris, &c.
Quadragesimo primo: ex veteribus libris car-
taceis præmissorum, hucusqz factis & re-
servatis, ac in posterum conser-
vandis.”

It is remarkable that this title is *printed*.

With all his care John Phillipps did not literally obey the injunction in a most important particular—viz., in regard to the order that the new books should be of parchment. One other order was, however, scrupulously fulfilled—viz., “Postquam autem paginam aliquam integrum multorum nominum inscriptio compleverit, tum ministri, tum gardianorum ipsius parochæi subscriptionib’ volumus eam communiri;” and so, until 1624, occurs the yearly addition of the names of the Vicar and Churchwardens, “testibus de veritate præmissorum.”

Turning now to the general contents of this interesting volume, I will endeavour to point out what are the chief matters of value which it presents to our notice. It would be tedious to dwell on the present occasion upon the lists of baptisms, marriages, and burials, invaluable as they are to the genealogical student, which constitute the larger portion of a parish register, and it will be sufficient to mention that the volume before us is rich in entries of the Arnolds, Sacheverells, Barneses, Tawswells, Dunnings, Foys, the ancestors of John Locke, the philosopher, and others, who held property here during the period covered by the Register. Many of these are already printed in the third edition of Hutchins’ “History of Dorset.”

The Benefice of Buckland Newton is a Vicarage, and the Great Tithes were, for a considerable period, in the hands of the Dean and Chapter of Wells. How the profits of the tithes were realized by the owner becomes apparent by the following entry:—1573, March 27th, “William Bond generosus, firmarius Rectorie de Buckland,” was buried. So the tithes were farmed or rented by a gentleman, a leaseholder, as Hutchins’ history tells us, who resided on the spot, and made a living out of them, beyond what he paid to the appropriator. The name of Robert Hide, armiger, “firmarius Rectorie de Buckland,” occurs in 1597.

Under the year 1603 is entered in the Register a document of some historical interest, being

“**The trew copie of** a proclamacon solemnelie and publique lie proclaimed at the high crosse in Dorchester the xxixth day of

March Anno dni 1603 by John Rogers Esquier then high Sheeriffe of the Countie of Dorset.

fforasmuch as It hath pleased almighty god to call to his mercie owt of this transitorie life, our souaigne Ladie the high and mightie prince Elizabeth, late Queene of England ffraunce and Ireland, by Whose death, and dissolution, the Imperiall crowne of theese Realmes aforesaid, are nowe absolutelie, whollie, and solelie, come to the high & mightie prince James the sixth King of Scotland, Who is lineally and lawfullye descended from the bodie of Margaret daughter to the high and renowned Prince, Henry the Seventh King of England ffraunce and Ireland, his great Grand-father, the same Ladie Margaret being lawfully begotten of Elizabeth daughter to King Edward the fowerth, by which happie coniunction both the howses of Yorke and Lancaster were vntied to the Joy vnspeakable of this Kingdome, formerlie rent, and torne, by the long dissention of bloodie and rivill Wars, the same Ladie Margaret being also the eldest sister of King Henrie the eight of famous memorie, King of England aforesaid.

We therefore the Lords Spirituall and Temperall of this Realme, being heare assembled, vntied, and assisted with those of her late Maiesties privie councell, and with great numbers of other principall gentlemen of qualitie in the Kingdome, with the Lord Maior Aldermen, and Citizens of London, And a multitude of other good Subiects and Comons of this Realme, thirsting nowe after nothing soe much, as to make it knownen to all ps ons who it is that by lawe, by lineall succession, and vndoubted right, is nowe become the onelie souaigne Lord and King of theese Imperiall Crownes, to the intent that by vertu of his power, Wistdome, and godlie Courage, all things may bee p'vided for, and executed, which may prevent or resist eyther forein attempts, or populer disorder, tending to the breach of the perfect peace, or to the preuidice of his maiesties future quiet, doe nowe hereby with one full voyce and consent of tongue, and hart, publish and proclayme, that the high and mightie Prince James the sixth King of Scotland is nowe by the death of our late souaigne Queene of England of

famous memorie become also our onelie lawfull, lineall, and rightfull liege lord James the first King of England, ffraunce and Ireland, defender of the faith to whom as to our onelie Just prince, adorned (besides his vndoubted right) with all the rarest guiftes, of mynd and bodie, to the infinite comfort of all his people, and Subiectes, that shall live vnder him, We do acknowledge all faith, and constant obedience, with all hartie and humble affections both dureing our naturall lives for our selves, and in the behalfe of our posteritie, hereby protesting and denounceing to all psons whatsoeu', that in this iust and lawfull acte of ours, we are resolved by the favor of gods holie assistance, and in the zeale of our owne conscience (warranted by certayne knowledge) of his manifest and vndoubted right (as hath benne said before) to maynetayne and vphold his maiesties pson, and estate, as our onelie vndoubted Souaigne Lord and King, with the sacrifice of our lives, landes, goods, frindes and adherentes, against all power force or practise that shall goe abowt by word or deede, to interrupt, contradict, or impugne his iust claimes, his entrie into his Kingdome or any pte thereof at his good pleasure, or disobey such Riall directions as shall come from him. To all which we are resolved onelie to yeld our selves vntill the last droppe of our bloodes be spent for his service, Herely Willing and commaunding in the name of our Soveraigne Lord James the first King of all the foresaid Kingdoms all the late Livetenaunts deputie Livetenaunts Sherriffes, Justices, and all Maiors Bayliffes Cunstables, Headboroughes, and all other officers and ministers whatsoeu' that they bee aiding, and assisting from tyme to tyme in all things that are or shalbe necessarie for the preventing, resisting, and suppressing of any disorderlie assemblies or other vnlawfull acte, or attempt, eyther in woord or deede against the publique peace of the Realme, or any way p'iudiciale to the right, honor, state, or person of our onelie vndoubted and deere lord, and souaigne that nowe is, James the first King of all the said Kingdoms, as they will avoyd the perill of his maiesties heavie indignation, and their owne vtter ruine and confusion, beseching god to blesse his maiestie

and his Royall posteritie with long and happie yeres to Raigne over vs.

God save King James.

Subscribed bye

Robert Lee Maior	Morley
Io. Cantuar.	Y. Cobham
Tho. Egerton, C.S.	Gray. Wilt.
Tho. Buckhurst, Th.	Scroope
E. Oxford	Tomley
Nottingham	Ed. Cromwell
Northumberland	Rob. Rich
Gilbert Shrewsbury	George Tunstal
W. Derby	G. Chandos
E. Worcester	W. Compton
G. Cumberland	Norris
R. Sussex	L. Howard of Walden
Pembroke	W. Knollis
A. Lincolne	Ed. Wotton
Clarendon	John Stanhope
Bi. London	Rob. Cecil
Rob. Hereford	Joh. Fortescue
Io. Norwich.	Io. Dopham
Tho. Laware	

Imprinted at London by Robert Barker Printer to our late Soveraigne Ladie Queene Elizabeth, March xxiiij^o Anno Dni, 1602."

This was the actual day of the Queen's death, and the proclamation was made at Dorchester five days after.

In the year 1625 we arrive at the unfortunate hiatus which has been already mentioned, which continued until 9th February, 1653-4, when an entry informs us that "This booke [was] seene and allowed to be continued A Register booke for the pishe of Buckland Newton, by me, John Arnold," the third day of April 1654. It was at this time that Parliament directed that Registrars should be chosen by every parish, to be approved of and sworn by

a justice of the peace, for registering births and burials. William Summerset was acting in this capacity at Buckland in 1655, and an attempt was then made to remedy in some instances the neglect of former years, and it is recorded : " Whereas And for as much as divers Children borne and Baptized within this parish of Buckland Newton haue been omitted to be Regestred. And now I beinge truely Informed by theyre parents of the tyme of thier baptisme : haue nowe heere Regestred Each mans Chyldren (heerin) Altogether, And haue distinctly noted the daye And yeare of the Baptisme of Each one of them : Accordinge as I haue been Informed by theyr parents." This memorandum immediately follows the date, 14th January, 1655-6, and the earliest of these retrospective entries reaches back to the birth of Margarett, daughter of William Holland, 15th January, 1643. After two pages the Register resumes its usual course. Shortly afterwards another registrar was appointed. "The 16 day of May 1656, William Dauis of Buckland Newton was sworne Register of the said Parrisse of Buckland before vs, (vpon a Certificate of the said Parrishes receaued the day abouesaid.) Jo. FitzJames, Walt. Foy."

In those days marriages were performed by justices of peace, of which the following entry gives a specimen :—"The Contract and purpose of marryage betwene John Watts and Edith Lane both of the pish of Buckland Newton: was published in the sayd parish Church three severall Lords dayes viz. 1. August ye 24th, 2. August 31st, 3. September the 14th, and noe exception taken agaynst the sayd publication. And the sayd John and Edith were marryed att Midlton by John Squibb of Whitchurch Esq. the seventh daye of October 1656."

Yet even then, and with precautions of this kind, things did not always go well, for on 29th October, 1655, John Roberts, of Buckland Newton, practitioner of Chirurgery, and Salina Bryce of Broade Sidlinge, daughter of Ela Bryce of Buckland Newton, widow, were married by John Arnold Esq., J.P. in the presence of "William Summerset, Register," and the same couple *again married* 5th June, 1656, by John Squibb of Whitchurch Esq.,

J.P., the witnesses then being William Bryce of Buckland Newton, William Bolter of Beer Regis, Robertt Squibb of Whitchurch, and William Coker Jun. of fframpton, Gentlemen. Soon after this date—viz., between October and December, 1658, a note has been made by the Lay Registrar, which shakes our confidence a little in the exactitude of every entry. “Here is to bee noted that here followinge ar regestred severall psons births and buryalls accordinge to the just tymes thereof but not all in order as they were borne or buried: (or marryed) by Reason that I Came not to the knowledge of it the parish being spacious and my selfe not able by Reason of sicknes to enquire after it and soe to doe it orderly.” This memorandum shews the mistake of Parliament in making any person, other than the minister who performed the rite, the keeper or registrar of the record.

One entry in the Register during the Commonwealth period descends more into particulars than is usually the case. “Katherin Sacheverell of Buckland wid., was buried Julij the twenty-thyrd, 1657. Shee was about the age of 86 yeares and leueed in this pish about 40 yeares in which tyme (by the mercy of god) shee was one that loued and followed the word of God, and was a pyous and Charytable woman: & in her Conversation vnblameable And in her last End Comfortable in her god and savyour with whome shee now doth leeue in glory.” This lady was married to John Cheverell gent., (as the name was often written) 12th September, 1616, as Katherine White of Stratton. Her husband is probably identical with the John Sacheverell, the great-great-grandfather of the famous Henry Sacheverell, D.D.

After the Restoration it is satisfactory to see that Church Discipline was still maintained among the unruly parishioners of Buckland. On May 3rd, 1674, Mr. William Aarnold and Jone Lane were excommunicated in Buckland Church. On the 16th of the same month Martha Lane, the reputed “dafter” of Thomas Trew, of Clinger, was baptised, and a few days afterwards—viz., on May 31st, “Thomas Trew bore Penance in Church.”

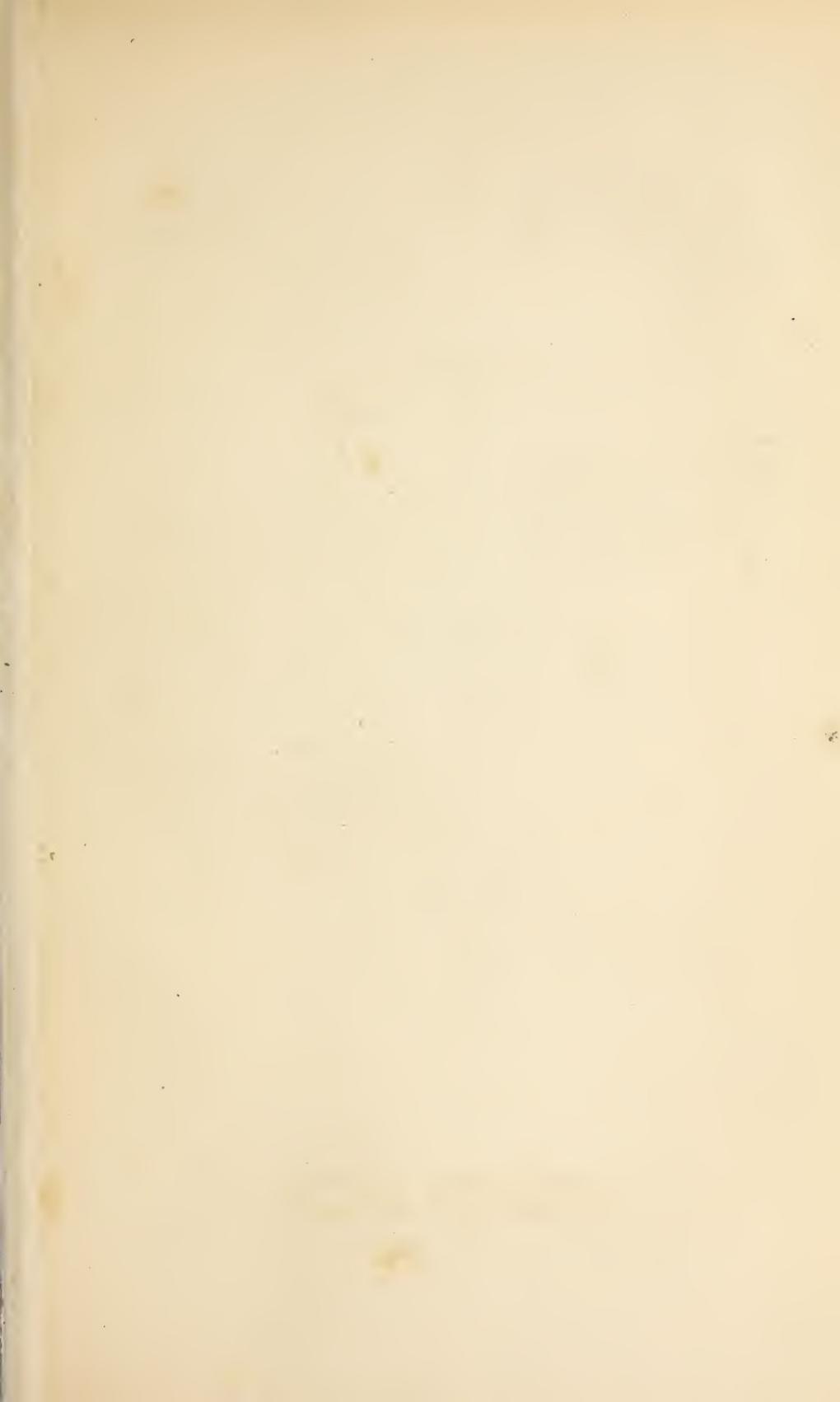
Mr. William Arnold appears to have been incorrigible, for on

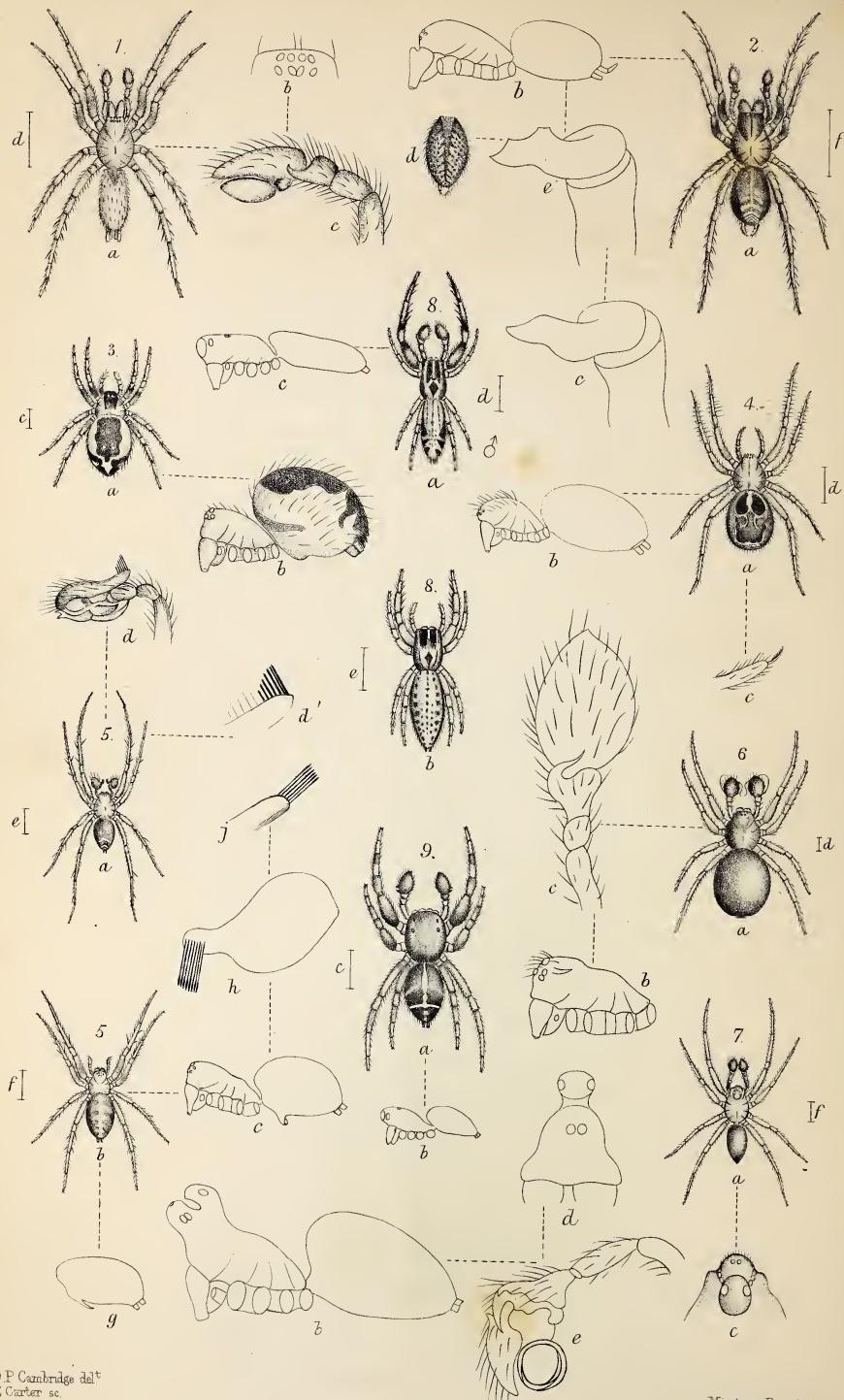
4th October, 1685, he was again excommunicated. It speaks well, however, for the state of Buckland at this period that these are the only entries of the kind which occur in the Register.

There are various entries scattered through this Register relating to benefactions and other parochial matters, with which there is no occasion to detain you. One curious memorandum should, however, be noticed, as it shews the singularly cumbersome, and one would suppose unsatisfactory, plan on which small details of parish business were discharged. Buckland Churchyard was fenced—in former times, as recently, until 1877—by wooden rails; and instead of the repair of these rails being carried out by a common rate upon the parishioners specified numbers of rails were assigned to the various holdings or tenements, the owners of which were responsible for their being kept in order. Thus “A List of the Churchyard Rails from the West Gate Northward to the North-east wicket,” which is not dated, but evidently belongs to the latter part of the 18th century, enumerates 25 churchyard rails, the repair of which was distributed among the owners or occupiers of 20 holdings. A more extended list in the Burial Register, 1813-1865, adds the persons responsible for the rails on the south of the churchyard, as well as from the west gate northwards, giving, in all, 32 holdings. This list is principally taken from the churchwardens’ book of 1760.

Other matters, interesting from the point of view of the parochial historian, might easily be added to the foregoing pages. But the limited time at the disposal of the Field Club to-day forbids my saying more. I hope the sight of this precious volume, which the present custodian prizes so highly, will impress the members with a keen sense of the value of the treasures stowed away in many an iron register chest.







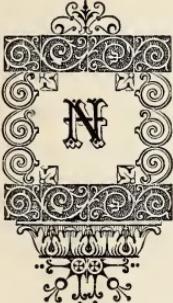


On New and Rare British Spiders.

By the Rev. O. PICKARD-CAMBRIDGE, M.A., F.R.S.,
&c., &c.

Plate A.

(READ FEBRUARY 13TH, 1889).



EARLY three years have passed since my last communication to you on spiders. During that period rheumatism and lumbago have very much hindered the long-sustained stooping process so absolutely essential to success in working out the spider population among moss and other herbage in swamps and such like situations. I have, however, done a little myself, and have received much help from my sons, and especially from my nephew, Frederick O. P. Cambridge, whose skilful pencil has been more than once employed to illustrate entomology in former volumes of our "Proceedings." A new spider-student has also sprung up (not, I am sorry to say, in our own county, though not far outside it) in Dr. Blackmore, of Salisbury. From him I have received, among numerous other spiders, two fine new additions to the British List—*Prosthesima rustica* (Sim) and *Cœlotes pabulator* (Sim). The former of these was found, though very rarely, in Dr. Blackmore's own garden in Salisbury; the latter under pieces of rock and stone near Alderbury. Dr. Blackmore sent me several females of this spider the year

before last ; but though suspecting them to be different from our ordinary species, *Cœlotes atropos* (Walck.), the absence of the male prevented my forming a reliable opinion upon it. The season for the males was evidently past, and Dr. Blackmore, having in the month of July obtained some recently hatched young, resolved to try and rear them, hoping thus to obtain in due time both sexes. The young spiders fed fairly, and made tolerable progress ; but winter coming on both feeding and growth stopped, and I heard no more of them until the following May, when Dr. Blackmore, having gone to Alderbury at my suggestion, in hopes of finding both sexes in the adult state, wrote to me that he feared he was again too late for the males, as he found females already adult and some of them with egg-cocoons, while some that he left there the previous summer just hatched were still not half grown ; and as for those which he had been endeavouring to rear they had made but little progress and were no more advanced than the others, whence he concluded this spider required at least two years to become full grown. Ten days later, however, Dr. Blackmore wrote again to tell me that his brood had made a sudden start, and were now rapidly approaching maturity. There was nothing to account for this sudden growth, neither change nor extra abundance of food. Their progress received no check after this, and in a very short time the final moult took place, and three fine adult males, besides several females, rewarded Dr. Blackmore's pains. From these I have been able to identify it with *Calotes pabulator* (Sinn), found not unfrequently in the Alpine regions of France, but not before recorded in Britain. The long-continued stagnation of growth noticed above and the subsequent start and rapid progress to maturity is interesting ; but it is known to occur in respect to other spiders also, as well (I believe) as in animals of widely different groups. I am not aware that any account can be given of this, further than that it is an economic fact in the creature's life-history, though of course during winter we should not in any case expect very rapid growth. One of the males bred by Dr. Blackmore lived until last month, when it died from accidental neglect, being then nearly two years old.

Another interesting discovery, made last May, by my nephew and myself, was of numerous examples of both sexes of a curious *Salticid* (or jumping spider)—*Hyctia Nivoyi* (Luc)—among grass and water weeds in a large bog on Bloxworth Heath. These examples enabled me to prove that the *Salticus promptus* (Bl.) (Spid. Dors. p. 560) is not the young of *Hyctia Nivoyi*, as thought by Mons. Simon, but quite a distinct species. The true *Hyctia Nivoyi* (Luc) is, therefore, now recorded for the first time as British. Its elongated and flattened form will easily distinguish it from any other yet found in Britain. It has, moreover, the curious faculty of being able to run backwards as quickly as forwards. A *jumper* in the true sense of the word it certainly is not. The discovery of this spider in abundance at Bloxworth, where, though I have been collecting for so many years, I have never met with it before, is remarkable, and should teach us never to be too confident that we have done all that there is to be done in even our best worked localities, nor to be content to leave a single spot unsearched. This spider is probably very local, and on the exact *spot* where we found it I had not before worked. I have also received from Folkestone (where they were found by Colonel Le Grice, an energetic recruit in the study of spiders) examples of another very fine and distinct *Salticid*—*Pellenes tripunctatus* (Walek.) This is indeed a *jumper*, not only in name but in fact; its leaps being from 18 inches to 2 feet in extent. It has its abode among rough stones and chalk knobs on the cliffs near the shore, and it is a conspicuous object, loving sunshine, and *ought* to be found along our Lulworth and Purbeck coast. This is its first record as a British spider, though it is not rare in many localities on the Continent. I have also to record as new to Britain *Enoplognatha caricensis*" (Fickert), found by my nephew at Hyde, near Bloxworth. This is a spider of much interest, its generic characters being of so mixed a kind that it has been placed by different authors in five or six different recognised genera, and is now, finally I think, placed in a genus formed by an Italian araneologist, Sgr. Pietro Pavesi, specially for the reception of this and some others of its congeners. My

nephew also, last October, found an adult male of *Walckenäera capito* (Westr.), at Whitenose, on the coast between Weymouth and Lulworth. This is the first recorded British example of a most curiously formed spider. Another of the same group, and new to science, *Walckenäera interjecta* (Cambr.), was sent to me almost at the same time by Mr. F. M. Campbell, from Hoddesdon, Hertfordshire, and by General Van Hasselt from Holland.

The only other spider which I have to record as new to science is a *Linyphia* (or rather, belonging to the restricted genus *Tmeticus* (Menge), examples of which have been sent to me from Southport, Lancashire, by a very diligent spider collector, Mr. Cecil Warburton, of Christ's College, Cambridge. It is a fine and very noteworthy species, though somewhat closely allied to *Linyphia rufa* (Westr.) *L. scopiger* Grube (a Northumbrian and Scotch species, first found in Sweden by M. Westring). On this new spider I have conferred the name of its discoverer—*Tmeticus Warburtonii*. Besides those already mentioned I have to record seven others as found for the first time in our own county. *Tegenaria Guyonii*, the true "Cardinal spider," sent to me from near Poole by the late Mr. T. B. Kemp-Welch. This is our largest house spider. I have found examples in old cupboards and such like places at Oxford, with an expanse of legs measuring four inches or more in diameter. We have a closely allied species in Dorset, abundant in cellars at Weymouth and among rocks in Portland — *Tegenaria atrica* (C. Koch), if anything larger in the body than "the Cardinal," but not so long-legged. The other spiders new to this county are *Neriene agrestis* (Bl.), *Neriene clara* (Cambr.), and *Neriene Huthwaitii* (ibid.). The female of this last spider was described by myself some years ago as a distinct species—*N. formidabilis*; it was then unknown to me as the female of the present species. These three, as well as an example of *Walckenäera pratensis* (Bl.), were found at Hyde, by my nephew, who also with myself found two other spiders (*Salicids*), near Bloxworth last spring, new to this county, *Hasarius arcuatus* (Clk.) only found before at Lyndhurst, many years ago; and *Dendryphantes hastatus* (Clk.), a single example of which I received

some years since from Norfolk, recording it in the "Proceedings" of our Club, vol. vi., p. 1 (1885). We also have met with other rare or local spiders in this county, during the last two or three years, some of them having only occurred once or twice before, and that many years ago. These are all noted by name, with particulars of time and place of capture at the end of this paper.

I must not omit to notice also the occurrence of a curious *Chelifer* (or false scorpion) found by my nephew at Hyde, *Chelifer peculiaris* (L. Koch), new to Britain, and of another, *Cheiridium museorum* (Leach), "Book Scorpion," found by myself at Bloxworth. The latter has got its trivial name from being met with in old libraries and museums among damp and dusty old books. I had previously received this species from Mr. C. W. Dale from Glanvilles Wootton. In September last I found also a fine *Phalangid*, or Harvestman, new to Dorset, among the ruins of Corfe Castle—*Acantholophus spinosus* (Bosc). This is our largest known British species.

From the above outline of our spider work since my last communication the following general results may be noted:—*Two species new to science; eight new to Britain; ten new to Dorset;* and 34 others either rare or local species, mostly found in this county, besides the two *Cheliferidae* and the *Phalangid*.

The number of spiders now recorded as British is about 525, while 380 or so of them have been met with in this county.

* DESCRIPTIONS AND NOTES ON NEW SPIDERS FOUND DURING 1886, 1887, AND 1888.

FAMILY DRASSIDÆ.

PROSTHESIMA RUSTICA (L. Koch.)

Pl. A, fig. 1.

Prosthesima rustica (L. Koch.), Zeitschrift des Ferdinandneums, 1872. p. 309. E. Simon, Les Arachnides de France, tom. iv., p. 93.

Adult male, length nearly 4 lines.

* Those spiders only are described at length which have not been already described in "Spiders of Dorset."

The whole of the fore part of this spider is yellowish red-brown. The *cephalothorax* is clothed with a few long dark hairs and some short pale pubescence. The *legs* are rather long—4, 1, 2, 3,—furnished with hairs, bristles, and (chiefly on those of the two hinder pairs) with fine spines, and there is a thin scopula beneath the tarsi. The colour of the *abdomen* is dull clay, with a short reddish yellow-brown wedge-shaped coriaceous patch on the front part of the upper side, and pretty thickly clothed with coarse dark hairs, and its shape is somewhat cylindric-oval. In form and general appearance *P. rustica* is of the ordinary type. The *eyes* are all pale grey, almost of equal size, and closely grouped together in two nearly parallel transverse lines of almost equal length. Those of the anterior row are contiguous to each other; the hind-central pair are of irregular, somewhat oval, form, and also contiguous to each other; the laterals are near to them but not contiguous. The *palpi* are moderate in length; the radial is shorter than the cubital joint, and has its outer extremity produced into a curved, tapering, sharp-pointed apophysis, the joint directed upwards. The length of this apophysis is about equal to the breadth of the joint at that part. The digital joint is of moderate size, oval, pointed in front, and suffused with brown. The palpal organs are rather prominent, but compact, with corneous lobes and processes. The spinners are rather long, those of the inferior pair strongest and cylindric, and of a reddish yellow-brown hue. This spider is of great rarity on the Continent of Europe, and may easily be distinguished from others of this group by its reddish yellow-brown colouring, to which there is no approach in any other British species known to me. Dr. Blackmore has met with two adult males of it at different times, one wandering at night in 1886, the other more recently under an old board in his garden at Salisbury. A female was also found, but it was, unfortunately, destroyed before it could be forwarded to me.

FAM: AGELENIDÆ.

TEGENARIA GUYONII (Guérin-Méneville).

Tegenaria Guyonii Cambr. "Spid. Dors." 473,

Tegenaria domestica Bl : "Brit. and Irish Spid." p. 163, pl. xi., fig. 105.

An adult male of this spider was sent to me (some time before his death) by the late Mr. T. B. Kemp-Welch, by whom it was found between Bournemouth and Poole. This is its only record as yet within the county of Dorset.

CŒLOTES PABULATOR (Sim.).

Pl. A, fig. 2.

Cœlothes pabulator Sim., Arachnides de France, tom. ii., p. 34.

Adult female, length 5 to $5\frac{1}{2}$ lines; male, $4\frac{1}{2}$.

This spider is very nearly allied to *Cœlothes atropos* (Walck.) (Spid. Dors : p. 60), which it resembles closely in size and general appearance. So far, however, as concerns the examples that I have yet seen, it seems to be on the whole rather smaller. The colours, though similar, are differently distributed ; in *C. pabulator* the dark colouring of the abdomen is more diffused, leaving scarcely any pattern visible excepting an indistinct pale longitudinal stripe along the middle of the fore part and a series of more or less distinct dull yellowish angular bars or chevrons on the hinder half. The sides and under side are also less thickly marked and mottled with black than the upper side. In all the examples I have seen of *C. atropos* the pale stripe on the fore part of the upper side of the abdomen is replaced by a well defined, long, tapering black stripe. The palpi of the male also bear a close general resemblance to those of *C. atropos*, but the apophysis on the outer side of the cubital joint has the angular prominences on its upper side far less strong and its termination rather more obliquely pointed.

Found by Dr. Blackmore, of Salisbury, underneath pieces of stone near Alderbury, Wiltshire, and adults of both sexes were bred by him from thence in June, 1888. The occurrence of this Alpine species in this part of England is curious, Mons. Simon says that it inhabits Alpine meadows at 1,800 metres height.

Dr. Blackmore tells me that the snare of this spider is rather like, though smaller than that of *Agelena labyrinthica*, without the external portion of the latter's snare, the tube extending some 8 or 9

inches into the loose gravel or some natural crevice in the soil. It generally divides into two passages, one of which appears to serve as a kind of larder, and is encumbered with the *débris* of small beetles and wood lice, upon which no doubt they feed. The other passage ends in a rough sort of chamber, occupied by the female spider and its young. The egg-cocoon is lenticular, flat beneath, convex above, and the eggs are enclosed in a fine close-textured silk fabric, like thin white paper.

FAMILY T H E R I D I I D Æ.

GEN : ENOPLOGNATHA (Pav.)

The genus *Enoplognatha* corresponds to *Drepanodus* (Menge), and includes a portion of the genus *Neriene* (Bl.), with which it is connected by strong affinities. It may, however, be distinguished at once by the palpi of the female ending with a distinct claw. It is also allied to *Epeira*, but may be recognised from that group by the entire absence of spines from the legs, as well as by the form of the maxillæ. From *Theridion*, the possession by the male of a stridulating organ at once separates it.

ENOPLOGNATHA CARICIS (Fickert).

Pl. A, fig. 4.

Steatoda caricis Fickert, Zeitschr : für. Entom. Neuefolge, H. v., p. 29.

Enoplognatha caricis Fickert, Simon, Arachn : de France, 5, p. 188, exclude synonym.

Adult female, length $2\frac{1}{2}$ lines.

The *cephalothorax*, *legs*, *palpi*, and *falces* are of a yellow-brown colour, the *maxillæ*, *labium*, and *sternum* darker brown. The *abdomen* is of a dull luteous yellow-brown, the greater part of the upper side occupied by a large leaf-like pattern of black, bordered with a white line; the black is not regularly disposed over this pattern, but is chiefly gathered into two large patches in front (one on each side of the anterior extremity) and a large patch at the posterior extremity; the position of the dorsal vessel is indicated by a white irregular line, enclosing an elongate red-brown marking

just in advance of the middle of the abdomen. The whole surface of the abdomen is covered thinly with longish coarse prominent hairs.

The *caput* has its upper part furnished with coarse prominent hairs. The normal converging grooves and indentations are indicated by dusky lines ; the profile of the cephalothorax forms a pretty regular curve ; the thoracic indentation is strong, and the height of the clypeus is rather less than half that of the facial space. The *legs* are slender, not very long, but well furnished with hairs and bristles ; the tibiae and metatarsi have numerous erect ones along them. Their relative length is 1, 4, 2, 3.

The *palpi* terminate with a distinct, curved, pectinated claw.

The *eyes* are rather small, subequal, and form a rather narrow oval transverse figure ; the four centrals form nearly a square, its anterior side being rather shortest. Those of the posterior row are separated by equal intervals and edged with black.

The genital aperture and process are simple and inconspicuous. The falces are moderate in length and strength, straight and vertical.

A single example of this distinct species was met with by F. O. P. Cambridge in a swamp at Hyde, near Bloxworth, in May, 1888. The colours and pattern on the abdomen will distinguish it at a glance from the two other British species, in which the abdomen is of a uniform blackish hue, with (in one of them only) some rather indistinct whitish spots. *Vide Spid. Dors.*, p. 123.

This is the first record of *E. caricis* as a British spider. Mons. Simon (Arachn., de France, 5, 188), conjectures that *Steatoda Clarkii* (Cambr.) may be a synonym of this species, but the eyes of *S. Clarkii* are totally different, and the palpi have no terminal claw.

GEN : TMETICUS (Menge).
(*Linyphia Latr. ad partem*).

Pl. A, fig. 5.

Tmeticus Warburtonii sp. n.

Adult male, length rather over $1\frac{1}{2}$ lines ; adult female 2 lines.

The whole of the fore part of this spider is of a dull orange yellow-brown hue, and the abdomen of the female is dark leaden brown with a longitudinal, pale, strongly dentated pattern on its upper side, representing a coalition and development of the usually (in this group) almost obsolete normal angulated lines or chevrons, in conjunction with the elongated dorsal stripe. This pattern is probably in many examples rather indistinct until the spider is immersed in spirit of wine, and I do not trace it, except very faintly, even in spirit, in the male. In this sex the colour of the abdomen is nearly black. The cephalothorax has a blackish marginal line, and the normal converging grooves are of a dusky brownish hue.

The *eyes* are tolerably closely grouped together, and seated on strongish black spots. Those of the posterior row are equidistant from each other and separated by an eye's diameter. The clypeus is equal to rather over half the height of the facial space, and only slightly concave or impressed.

The *legs* are tolerably long and moderately strong, furnished with hairs and a very few fine spines, mostly on the tibiæ. Relative length—*Male*, 1, 4, 2, 3; *female*, 4, 1, 2, 3.

The *palpi* of the male are tolerably long and strong. The cubital joint is bent, enlarged towards its fore extremity and longer than the radial, which is spreading in front; its extremity is obtuse, and furnished in front with numerous strong hairs. The digital joint is large, its outer side considerably and angularly prominent, and at its base is a long, strong, tapering, obtusely-pointed eminence, furnished with a group of strong, straight, sharp-pointed, black bristles, equal in strength throughout their length, directed forwards and a little outwards in a straight line on the outer side from its extremity downward. The longest of these bristles are at the extremity of the eminence, and they decrease gradually and regularly in length to the shortest. The palpal organs are highly developed, prominent, and complex. Among other processes are a long, very strong, semidiaphanous one, curving backwards from the middle to the inner side, and a black,

tapering, curved spine, nearer their extremity, on the inner side. Also at their base on the outer side is a strong, somewhat curved, triangular process, analogous to that found in the same position in numerous other species of *Linyphia* (Latr), and the precise form of which is usually an unfailing specific character. So here, again, the form of this process differs from that of the closely allied species mentioned below. The *falces* are rather long, powerful, and prominent towards their base in front.

The genital process of the female is prominent, obtuse, straight, and directed a very little backwards, being nearly vertical.

This spider is closely allied to *Tmeticus scopiger* (Grube) (*Linyphia rufa*, Westr. and Cambr., Spid. Dors., p. 550), and resembles it in its general character and structure; but it may be easily distinguished by the rather larger size and closer grouping of the eyes, the less height of the clypeus, and, especially in the male, by the group of bristles at the end of the digital prominence of the palpi. In the present spider these bristles are graduated in length from the shortest to the longest; black and single-jointed, whereas they are of a pale hue, longer, but of equal length, and rather enlarged and sub-divided at their points in *T. scopiger*, and the prominence itself is less obtuse than in that species. The spider itself is also rather smaller. The spines also on the legs in *T. scopiger* are more numerous and stronger.

The abdominal pattern (of which I can find no trace in the many females I have examined of *T. scopiger*), together with the short, straight, genital process, will serve to render the female of *T. Warburtonii* equally distinguishable. In *T. scopiger* this process is bent in the middle, and then runs parallel with the under side of the abdomen for the rest of its length.

Examples of both sexes were found among grass on the flats among the sandhills near Southport, in Lancashire, in the late summer time of 1887, by Mr. Cecil Warburton, of Christchurch, Cambridge, and kindly sent to me for identification. It is an exceedingly interesting species, being so very nearly allied to *T. scopiger*, and yet so unmistakably distinct.

NERIENE CLARA (Cambr.)

Neriene clara Cambr., "Spiders of Dorset," p. 492.

An adult female of this spider was found at Hyde by F. O. P. Cambridge in May, 1888. The male is not yet discovered. It has only as yet been previously taken on the Cheviot Hills and Orkney Islands, and I still believe it to be a good species. This is therefore its first occurrence in Dorsetshire. On the inner side of the falces of this spider is a series of transverse serrations, correlated with a minute corneous point at the base on the inner side of the humeral joints of the palpi, and conjectured to be a stridulating apparatus, intended to produce call-notes, as it were, between the sexes.

NERIENE AGRESTIS (Bl.)

Neriene agrestis Bl., Cambr., "Spid : Dors." 486.

An unusually richly coloured and well marked adult male of this spider was found at Hyde, near Bloxworth, by F. O. P. Cambridge, in the spring of 1888. I had not before met with it in Dorsetshire.

NERIENE HUTHWAITII (Cambr.)

Neriene Huthwaitii Cambr., "Spid. Dors." 436.

,, *formidabilis* Cambr., *Ibid.* p. 135.

Numerous examples of both sexes of this fine species were found in swamps at Hyde, and Morden Park, near Bloxworth, in June and September, 1888, by myself and F. O. P. Cambridge. Individuals of this species differ a good deal in size and depth of colouring. It is now pretty certain that *Neriene formidabilis* (Cambr.) (l.c. supra) is the female of *N. Huthwaitii* (Cambr.). It was conjectured that it might be so, when the type of the former was described many years ago, though it was then thought to be distinct, as *N. Huthwaitii* had not then been discovered in Dorset, and no male was found with or near *N. formidabilis*. In this group, where the males of different species are easily distinguished from each other, while the females are often exceedingly difficult to distinguish, it is frequently a matter of much uncertainty to what males, whose females are unknown, isolated females may belong.

and, therefore, it is commonly safer to describe these latter as distinct species, rather than to run the risk of allocating them at once to the wrong males.

This is the first record of *N. Huthwaitii* (Cambr.) in Dorset.

WALCKENAERA PRATENSIS (Bl.)

Walckenära pratensis Bl., "Brit. and Ir. Spiders," p. 306, pl. xxi., fig. 222.

" " Cambr., "Spid. Dors.," p. 502.

An adult male was found by F. O. P. Cambridge at Hyde in 1888. This is its first record as a Dorset spider; it had previously only occurred in North Wales.

WALCKENAERA CAPITO (Westr.)

Pl. A, fig. 7.

Erigone capito Westr., "Araneæ Suecicæ," p. 213.

Walckenära capito Westr., Simon, "Arachn. de France," tom. v., p. 823.

Adult male, length $1\frac{1}{3}$ lines.

Cephalothorax, falces, maxillæ, labium, and sternum dark reddish-brown, closely and finely striated with scratch-like marks. It is of the usual oval form, but the caput is greatly elevated, the upper extremity divided into two lobes, the anterior the largest, surrounded with a patch of short hairs, and bearing the two lateral pairs and fore central pair of eyes; the hinder lobe springs by a small neck from the occiput, and bends over forwards in an enlarged oval form to the extremity of the anterior lobe, with which it is nearly in contact, leaving a narrow elongate fissure or space between the two; near the fore extremity of the hinder lobe are the hind-central pair of eyes, separated from each other by about two diameters' interval. The eyes of each lateral pair are contiguous, and seated on the sides near the extremity of the anterior lobe; and the fore-centrals, which are placed a little above the line formed by the two lateral pairs, are near together, but (apparently) not quite contiguous to each other, and are smallest of the eight.

The legs are tolerably long, slender, bright yellow, tinged with

red, furnished with hairs only ; on the tarsi, metatarsi, and tibiæ are a few very fine and erect hairs, the rest all oblique. I am not sure, however, that these erect hairs are to be found on the tarsi and metatarsi of the two hinder pairs.

The *falces* are rather small, straight, vertical, and a little prominent near the middle in front. Along each side is a series of transverse serrations, probably part of a stridulating apparatus, the stridulations being effected by the scraping across these serræ of a sharp corneous edge or point on the inner side of the base of the humeral joints of the palpi. I am not aware that stridulations have ever been heard by any observer in small spiders, made by an apparatus of this kind, but, at any rate, such an apparatus is plainly visible in the males of many species, and sounds might easily be caused by its working which, though inaudible to human ears, would be quite recognizable by appropriate faculties in the female spider. Mr. F. M. Campbell, in "Journal" of the Linnean Society, 1880, vol. xv., pp. 152-155, has a paper on this very interesting subject.

The *palpi* are rather long, similar in colour to the legs. The cubital is much larger than the radial joint, of a very elongate-oval form—*i.e.*, gradually lessening in size at the extremities. The radial is broad, and its inner extremity is produced into a long, tapering, curved, pointed apophysis, and with a group of strong hairs at its outer extremity ; near together on the inside edge near the base of the curve of the apophysis are two small black sharp spines. The digital joints are rather large ; the palpal organs well developed, complex, and with a black, filiform, tapering spine, coiled in a circular form at their anterior extremity on the outer side.

The abdomen is oval, of a sooty black hue, shining, and thinly clothed with hairs.

An adult male of this exceedingly rare spider was found under a stone close to the shore at Whitenose, between Lulworth and Weymouth, early in October, 1888, by F. O. P. Cambridge. It is something like *W. cucullata* (Wider), and, in fact, an example of this last species was once mistaken for it by Dr. Thorell.

WALCKENAERA INTERJECTA (Cambr.)

Pl. A, fig. 6.

Walckenäera interjecta Cambr., Trans: Hertfordshire Nat: Hist: Society 1888, vol. v., p. 18.

Adult male, length $\frac{1}{12}$ th of an inch.

Cephalothorax black-brown; *legs* and *palpi* yellow; digital joint of palpus yellow-brown; *abdomen* black.

The *cephalothorax* has the *caput* slightly elevated towards the ocular region, very much like that of *W. Beckii* (Cambr.) The hind-central pair of *eyes* are about an eye's diameter from each other, and placed transversely at the fore-margin of the elevation; the hind-lateral eye (on each side) is more than a diameter's interval from each hind-central eye on its side; and there is a long and slightly-curving tapering indentation running backwards from between the hind-central and hind-lateral eyes on each side. The height of the clypeus is about equal to half that of the facial space.

The digital joint of the *palpus* is large and has a small pointed prominent lobe at the base on the inner side, and is largely and, roundly prominent on the outer side. The palpal organs are rather complex, and are furnished with three spines; one, slender, filiform and of considerable length, issues from near their base on the outer side, and coils freely round and over to the inner side, recurving and ending in a very fine, free, hair-like point beneath its extremity; another issues from near the fore-end of the palpal organs, and is circularly curved and sharp-pointed; the third issues from near the base of the last, and is nearly straight, prominent, and almost equal in size from its base to its sharp point. The radial joint is short, about equal in length to the cubital; it is broad, obtuse, and, looked at from above and behind, somewhat semi-lunar shaped; its outer extremity is produced into a small, tapering, sinuous, sharp-pointed spine, bent abruptly inwards just in front of the anterior edge of the joint. Close beneath the base of this spine is a very small thorn-like projection.

The *legs* are moderate in length and strength, not very unequal in length—4, 1, 2, 3,—and furnished with hairs only.

The *abdomen* is oval, clothed thinly with fine short hairs.

The female is slightly larger than the male, but similar in general form and colours. The caput, however, is less prominent, being only very slightly rounded above, behind the ocular region. The genital aperture is small, semi-circular, and placed at the hinder extremity of a largish, nearly circular, rather prominent area.

An adult male of this distinct little spider, new to science, was found at Hoddesdon, in Hertfordshire, by Mr. F. M. Campbell, and kindly sent to me in 1887, and very shortly after I received an example of each sex from Major-General A. W. M. Van Hasselt from Holland. It is closely allied to *Walckenüera elegans* (Cambr.), a German species; but it differs both in the form of the caput and of the palpi and palpal organs.

FAM: SALTICIDÆ.

GENUS PELLENES (Sim.)

PELLENES TRIPUNCTATUS (Walck.)

Pl. A, fig. 9.

Attus tripunctatus (Walck.), Ins. Apt. ii., p. 418.

„ *crucigerus* Walck., Ins : Apt : ii., p. 420,

Pellenes tripunctatus Sim, "Arachn. de France," tom. iii., p. 94.

Adult male, length $2\frac{1}{4}$ to $2\frac{1}{2}$ lines; female 3 lines.

Cephalothorax longer than broad, massive, roundish oval, rather truncated in front, profile of the upper part curved, and sloping over to the anterior eyes. The height of the clypeus is equal to about half the diameter of one of the two large anterior eyes. The hinder slope is steep and very slightly incurved. The colour of the cephalothorax is black, clothed (but not densely) with rather golden-yellowish adpressed hairs and, thinly, with some long prominent dark ones. In front of the ocular area in the region of the anterior row of eyes it is clothed with bright scarlet hairs, and a well defined transverse stripe of shining white ones runs across immediately above the fæces and is continued in a more attenuated form all round the margin on each side.

The *eyes* form a large quadrate figure broader than long, and its anterior shorter than its posterior side. The anterior row is curved (*i.e.*, when looked at from above and behind). Its two central eyes are nearly contiguous to each other; its two laterals are very much smaller and separated from the centrals by nearly a diameter's interval. The small eyes of the middle row are nearer to the fore laterals than to the eyes of the posterior row.

The *legs* are black to black-brown, with reddish tarsi and metatarsi. The posterior half of the tibiæ of the first pair are vivid shining red. Their relative length is (*male*) 3, 1, 4, 2. Those of the first pair are much the strongest. All are clothed with hairs—some along the fore sides being white, and the metatarsi are armed with spines, though these are not similarly disposed on all the legs. Each tarsus ends with a strong black claw tuft.

The *palpi* are moderately long, black, the fore part of the humeral, and also the radial joints thickly clothed with shining white hairs; radial joint short with a rather longish obtusely-pointed apophysis, directed forwards at its fore extremity on the outer side. The digital joint is large, elongate-oval, with two strong, sharp-pointed, slightly curved, corneous looking projections in a linear direction, not far apart, near its base on the outer side. The points of these projections are opposed to each other, and look somewhat like a pair of short nippers. The palpal organs are simple, consisting of a very large, prominent, roundish, or oblong-oval, corneous bulb.

The *abdomen* is oval, slightly truncated before. Its colour on the upper side is black to blackish-brown, clothed with hairs and hairy pubescence. A longitudinal central white-haired stripe bisects the upper side, broken into spots at its hinder part. This band is divided transversely by an indistinct curved band of yellowish hairs, traversing the upper part and sides, and again midway between that and the spinners by a very conspicuous parallel stripe of white hairs running through the third, from the end, of the three white spots of the central stripe. The four large patches formed by this pattern are jet black. The hairs clothing

the sides and under side are mixed yellowish and grey on a dark yellowish-brown to blackish ground.

The *female* resembles the male in general characters and markings, but is altogether lightly coloured, though the white pattern on the abdomen is less distinct, the hairs forming it being more of a dull yellowish than white colour, and the sides of the abdomen have several more or less distinct oblique black stripes. The palpi are yellow, and the form of the genital aperture is very distinct and characteristic. The relative length of the legs appears to differ from that of the male, being 3, 4, 1, 2.

Adults of both sexes of this fine addition to our British spiders were sent to me in June, 1888, by Colonel Le Grice, by whom they were found at Folkestone in that month. It appears to be an exceedingly active spider, and the extent of its leaps is wonderful. It lives among stones and rubbly chalk near the shore, and comes out during the hot sunshine. The very striking pattern on the abdomen will serve to distinguish it a glance from all our other British Salticids. It is common in many parts of France, Switzerland, and Germany.

GENUS HYCTIA (Sim.)

Pl. A, fig. 8.

HYCTIA NIVOYI (Luc.)

Hyctia Nivoysi Luc., "Explorations En Algerie," Arachnides, p. 183, pl. 10, fig. 5.

„ „ (Simon), "Arachn. de France" iii., p. 20, (exclude, however, *Salticus promptus* (Bl.), *Euophrrys prompta* (Thor.), and *Attus promptus* (Sim.) from synonyms there quoted).

Adult male, length from $1\frac{3}{4}$ to nearly $2\frac{1}{2}$ lines; female, 2 to $2\frac{1}{2}$ lines. Length of the cephalothorax in the male nearly equal to that of the abdomen. In the female the abdomen is longer in proportion.

Male.—The cephalothorax is oblong-oval, truncated in front, of a flattened form, with the hinder slope not very long, but moderately abrupt. The caput is black, dotted with reddish-golden squamose hairs, with some white ones of the same nature, forming in fine

uninjured examples three longitudinal broken lines, but often appearing only as isolated spots, and sometimes absent, probably through injury. The sides of the thorax are blackish-brown, and the upper side of this part is reddish yellow-brown, with a central longitudinal, more or less strongly marked, blackish line, often dilated in the middle into a largish diffused spot.

The *eyes* form a square, occupying as nearly as possible half the flattened upper area of the cephalothorax to the beginning of its hinder slope. The anterior row is curved. The two central eyes are nearly contiguous to each other, and touching the fore margin of the caput. They are more than double the size of the laterals, and all four are encircled with a rim of shining white, short, scale-like hairs. Each minute eye of the second or middle row equally divides the interval between the fore central eye and the eye, on that side, of the posterior row, and is in a straight line with them.

The *legs* are very unequal in length and strength—1, 4, 2, 3. Those of the first pair are much the longest and of inordinate strength, especially the femora and tibiæ. These joints are deep rich brown, the genua somewhat paler. The metatarsi and tarsi are yellowish, the anterior half of the former dark brown. The tibiæ of the first pair are pretty thickly clothed with hairs, and beneath them and the metatarsi are two (parallel) rows of strong black spines, 4 pairs on the former and 3 on the latter; beneath the metatarsi of the second pair are three small spines in a longitudinal row. The other legs are pale yellowish, thinly marked with black spots and stripes, the latter only on the femora. All the legs terminate with a small black claw tuft.

The *palpi* are short, of a yellow-brown hue, the radial and digital joints black-brown. The radial is rather shorter than the cubital joint, and furnished with strong bristly hairs. Its outer extremity is prolonged into a strong, curved, slightly tapering, but not sharply pointed, black, curved apophysis, as long, or longer, than the greatest width of the joint. The digital joint is large, clothed with short hairs; the palpal organs simple, consisting of

one large rounded corneous lobe, very prominent, in a sub-conical form, at its posterior part.

The *falces* are small, straight, vertical, and of a dark yellow-brown colour.

The *abdomen* is elongate narrow-oval, and of a rather flattened form. It is of a brownish-yellow colour, tinged with primrose-yellow, and sometimes with a greenish hue along the sides and hinder extremity of the upper part ; it is clothed with greyish and yellowish hairs and a few short black erect ones on the upper side, which is spotted and marked with black spots and lines, forming three broken longitudinal lines, best defined on the fore half. The outer margin is also furnished with some white hairs, of which there are some rather conspicuous patches, one or two on each side, towards the hinder extremity, and a tuft just above the spinners. The sides are closely striated with black longitudinal lines ; the under side is pale yellow, clothed with grey hairs, and has a black, more or less well defined, line along each side and a black spot a little in front of the spinners.

The *female* closely resembles the male in markings, but is altogether paler in colours, and the black markings on the sides of the abdomen are of a more spotty nature, and occasionally assume the form of oblique lines. The *fore legs* are also less strong than in the male.

Adults of both sexes of this very distinct and curious Salticid were found in some abundance by my nephew and myself in Hyde bog, near Bloxworth, in May, 1888, by carefully gathering up the dead grasses and moss and shaking it out over a cloth. They are not very active and showed no jumping powers*, but could, when approached with the finger, run as quickly backwards as forwards. This spider has not before been recorded in Great Britain. The spider given as *H. Nivoyi* (" Spid : Dors : p. 560) is quite distinct, and must now resume its original name of *H. (Salticus) prompta* (Bl.)

* Mons. Simon, however, attributes great agility and leaping powers to this spider when pursued. (*Vide* l. c. *supra*, p. 21).

HYCTIA PROMPTA, Bl.

Salicus promptus Bl., "Brit. and Ir. Spiders" p. 59, pl. iii., fig. 32.

Hyctia Nivoyi Cambr : "Spiders of Dorset," p. 560.

This spider will now resume its position as a distinct species. After an examination of the type specimen some years ago Mons : Simon concluded that it was only an immature example of *Hyctia Nivoyi* (Luc.), a spider I had then never seen ; but the capture, by myself and my nephew, Fredk. O. P. Cambridge, of numerous examples of it in all stages of growth at Bloxworth in May, 1888, prove it to be quite distinct from Mr. Blackwall's *Salicus promptus*, and, as I suspect, even of a different genus. It seems to me that *Salicus promptus* is a *Marpessa* and very possibly the young of *M. pomatia* Walck (S. Blackwallii Clark). However, as this is uncertain, and Mons. Simon has a far wider acquaintance with this group than myself, I have still for the present followed his determination so far, at least, as the generic position of this spider is concerned. The two species *H. Nivoyi* and *H. promptus* differ entirely both in the cephalothorax and in the abdominal pattern, as well as in the proportionate length and breadth of the cephalothorax, which is shorter and less oblong than *H. Nivoyi*. The thorax in *H. promptus* is marked with distinct radiating lines, and the abdomen has a central, elongated, tapering band on its anterior half indicated by two rows of small black spots, and the sides are marked with distinct oblique rows of black spots reaching quite over to the middle of the upper side, where, however, they may be taken to represent the normal angular lines or chevrons. The spider itself is also of a much less elongate flattened form, than *H. Nivoyi*.

GEN: HASARIUS (Sim.)

HASARIUS ARCUATUS (Clk.)

Hasarius arcuatus Cambr., "Spiders Dors." p. 565.

I have found this spider in Hampshire, and have received it from Wokingham, but never met with in Dorsetshire until last June, when I and my nephew found it among dead herbage in a swamp at Morden Park, near Bloxworth.

GEN : DENDRYPHANTES (C. L. Koch.)

DENDRYPHANTES HASTATUS (C. L. Koch.)

Dendryphantes hastatus C. L. Koch, Cambr., "Proc :" Dors. N. H. and A. Field Club, vol. vi., p. 11.

An adult female was beaten off the lower boughs of a fir tree in Morden Park in June, 1888, by F. O. P. Cambridge. The only other British example recorded is that, noticed in "Proc." Dorset Field Club (l. c., p. 1 and 11), of an adult male found near Norwich by Mr. James Edwards. This is its first record as a Dorset spider.

NOTES ON RARE OR LOCAL SPIDERS FOUND,
MOSTLY IN DORSETSHIRE, DURING
THE LAST THREE YEARS.

FAM: DYSDERIDÆ.

GEN : DYSDERA (Latr.)

Dysdera crocota C. Koch., Cambr., "Spid. Dors.," p. 6.

Dr. Blackmore found this fine spider rather abundantly among rubbly chalk in old chalk pits near Salisbury, in September, 1888, when both sexes were adult.

FAM: DRASSIDÆ.

GEN : PROSTHESIMA (C. Koch.)

Prosthesima pedestris C. L. Koch., Cambr., "Spid. Dors.," p. 15, and "Proc." Dorset N. H. and Antiq. F. Club; vol. vi., p. 2.

I have received this distinct and local species from Colonel Le Grice (Folkestone), in June, 1888, and also more recently from Mr. T. R. Billings from the neighbourhood of Peckham.

Prosthesima Latreillii C. L. Koch., Cambr., "Spid. Dors.," p. 421.

I have met with this rare spider again at Bloxworth, and Dr. Blackmore has sent it to me also from Salisbury in 1887.

Prosthesima longipes L. Koch., Cambr., "Spid. Dors.," p. 422.

An adult male on Bloxworth Heath in the summer of 1888. This is the first I have seen since the year 1878.

GEN: DRASSUS (Walck.)

D. sylvestris (Bl., Cambr.), "Spid. Dors." p. 460.

Drassus infuscatus Westr. and Cambr., "Spid. Dors." p. 423, and "Proc: Dors. N. H. and A. F. Club" vi., p. 2.

Adults of both sexes not rare among dead leaves in Berewood in May and June, 1888.

Drassus troglodytes C. L. Koch., Cambr., "Spid. Dors." p. 17.

Dr. Blackmore sent me an example of this spider, found near Salisbury in 1888. It still continues to be a rare spider, though it is very widely distributed, I have received single examples of it from several other parts of England since the publication of "Spiders of Dorset" in 1879.

GEN: LIOCRANUM (L. Koch.)

Liocranum domesticum Wider., Cambr., "Spid. Dors." p. 38.

Passing along St. Catherine Street, Salisbury, one day in April, 1886, I met with a fine adult male of this rare and local spider crossing the pavement opposite the "White Hart" Hotel, and in the same month in 1887 I found several immature examples of it in a garden in the "Close." Dr. Blackmore has also sent it to me from his own premises.

FAM: DICTYNIDÆ.

GEN: LETHIA (Menge).

Lethia albispiraculis Cambr., "Spid. Dors." p. 53.

I have found this spider again, in 1887 and 1888, near the Chesil Beach, Portland, but very rarely, owing (for one reason) to the extreme difficulty in seeing and capturing them among the loose stones, pebbles, friable earth, and triturated seaweed, among which they live. The male resembles the female in colours and markings, being, however, often of a darker hue.

FAM: AGELENIDÆ.

GEN: TEGENARIA (Latr.)

Tegenaria cinerea Panz., Cambr., "Spid. Dors." p. 65.

Dr. Blackmore sent me an example of this spider from Salisbury

in 1888, and another was found about the same time at Warmwell, Dorset, by F. O. P. Cambridge. It is probably not so rare as it might seem to be from its infrequent occurrence, its habitat being in dark concealed corners, and old sewers, &c.

FAM : HAHNIIDÆ.

GEN : HAHNIA.

Hahnia elegans Bl., Cambr., "Spid. Dors.," p. 69.

The Genus *Hahnia* has usually been included in the Family *Agelenidæ*, but the very characteristic position of the spinners (between which and the normal position in the *Agelenidæ* there is as yet no known connecting link) induces me to separate it in a distinct Family.

Hahnia elegans occurred in abundance among moss and water weeds at the edge of a pond on Bloxworth Heath at the end of May and in June, 1888, but all were females.

FAM : THERIDIIDÆ.

GEN : PHOLCOMMA (Thor.)

Pholcomma gibbum Westr., Cambr., "Spid. Dors.," p. 82, pl. iii., fig. 5.

This curious little spider was found frequently in bogs and marshy spots at Hyde and Bloxworth in May, 1888.

GEN : THERIDION (Walck.)

THERIDION BLACKWALLII (Cambr.)

Pl. A, fig. 3.

Theridion Blackwallii Cambr. (sub *Euryopis*), "Spid. Dors.," p. 481.

In 1888 I received an adult female of this spider, taken near Cambridge by Mr. Cecil Warburton, of Ch. Coll., Cambridge.

GEN : CRUSTULINA (Menge).

CRUSTULINA STICTA (Cambr.)

Steatoda sticta Cambr. "Spid. Dors.," p. 97.

I had not seen this pretty, and hitherto very rare, spider for many years until the spring and early summer of 1888, when it was found (both sexes in the adult state) in some abundance by F. O. P. Cambridge and myself in bogs and swamps at Bloxworth and Hyde by shaking out dead grass, moss, and débris on a cloth.

GEN : LASÆOLA (Sim.)

LASÆOLA CORACINA (C. L. Koch.)

Theridion coracinum C. L. Koch., Cambr., "Spid. Dors.," p. 98 (sub. *Steatoda*).

At the end of May, 1888, I met with an adult female of this rare spider among grass in a swamp at Morden Park, near Bloxworth.

GEN : THERIDIOSOMA (Cambr.)

Theridiosoma argenteolum Cambr., "Spid: Dors :" p. 428 and 572.

A very nearly adult male of this spider was found in a swamp, Morden Park, on September 19th, 1888, a very unusual time for it to be in this stage of growth, unless its final moult is delayed, and the spider continues during winter in an undeveloped state until the following May, when its usual time of becoming adult arrives.

GEN : PEDANOSTETHUS (Sim.)

Pedanostethus neglectus Cambr. (sub. *Neriene*), "Spid. Dors.," p. 121.

An adult male was found by F. O. P. Cambridge among moss at Bloxworth at the end of August, 1888. This species and its near ally, *P. (Neriene) avida* (Bl.), have terminal tarsal claws in the female, shewing their affinity to *Enoplognatha (Drepanodus)*, Menge and their difference from the numerous other spiders with which they have hitherto been linked in the Family *Theridiidae*. M. Simon has therefore constituted for them the Genus *Pedanostethus* ("Arachn. de France," v. 195), the name *Ctenium* (Menge), formed for *P. livida* in (1869), having been already used for a genus of Lepidoptera by Panzer.

GENUS HILAIRA (Sim.)

Hilaira uncata Cambr. (sub. *Neriene*), "Spid. Dors.", p. 433, and "Proc." D. N. H. and A. Field Club, vol. iv., p. 151.

On several occasions since the "Spiders of Dorset" was published I have found both sexes of this spider in a swamp in Morden Park; and in September, 1888, it again occurred there freely. The genus constituted for this and the next species, *H. excisa* (Cambr.), appears to be a good one.

Hilaira excisa Cambr. (sub. *Neriene*), "Spid. Dors.", p. 487, and "Proc." Dors. N. H. and A. Field Club, vol. iv., p. 149.

This spider also occurred abundantly in the Morden Park swamp along with *H. uncata* (Cambr.) in September, 1888.

GEN: WALCKENAERA (Bl.)

Walckeniera trifrons Cambr., "Spid. Dors.", p. 166.

This spider had not been met with in Dorsetshire since 1862 until the spring of 1888, when numerous examples of both sexes were found among grass, &c., in a bog at Bloxworth by F. O. P. Cambridge.

Walckeniera crassiceps Westr., Cambr., "Spid: Dors.", p. 151.

, , *affinitata* Cambr., l.c., p. 151.

Two adult males were found by sweeping among rushes and other herbage on Bloxworth Heath in May, 1888, and another in the Morden Park swamp at the beginning of October in the same year by F. O. P. Cambridge.

Walckeniera melanocephala Cambr., "Spid. Dors.", p. 596, and "Proc." Dor. N. H. and A. F. Club, iv., p. 152.

An adult male and females of this rare and striking looking species were found at Hyde on June 28th, 1888, by F. O. P. Cambridge.

GEN: LINYPHIA (Latr.) (*ad partem*).

Linyphia impigra Cambr., "Spid. Dors.", p. 221 and 578.

, , *circumcincta* (Cambr.), l.c., p. 191.

Adults of both sexes found in abundance by F. O. P. Cambridge near Woolbridge in June, 1888, and also by myself in Morden Park, but sparingly.

GEN : LEPTYPHANTES (Sim.)

LEPTYPHANTES MISER (Cambr.)

Linyphia turbatrix Cambr., "Spid. Dors.", p. 454.,, *misera* Cambr., Ann. and Mag. N. H., 1882, p. 262.

Numerous examples of both sexes adult were found in a swamp among grass, &c., by F. O. P. Cambridge in May, 1888.

FAM : THOMISIDÆ.

GEN : XYSTICUS (C. Koch.)

Xysticus luctuosus Bl., Cambr., "Spid. Dors.", p. 305.

Several adult males of this rare spider were found by shaking dead leaves over a cloth at the end of May and beginning of June, 1888, in Berewood.

GEN : OXYPTILA (Sim.)

Oxyptila sanctuaria Cambr., "Spid. Dors.", p. 319, and "Proc." Dors. N. H. and A. F. Club, vi., p. 10.

In September, 1888, I found an adult male of this scarce species in a swamp at Bloxworth. All that I had before found were in dry situations.

GEN : PHILODROMUS.

Philodromus emarginatus Schr., Cambr., "Spid. Dors.", 333.

An adult female was sent to me from Inverness by Mr. Baxter in 1888.

GEN : THANATUS (C. Koch.)

THANATUS STRIATUS (C. Koch.)

Thanatus hirsutus Cambr., "Spid. Dors.", p. 337.Both sexes adult of this spider were found in abundance by myself and F. O. P. Cambridge in a bog on Bloxworth Heath in June, 1888. It is certainly identical with *Thanatus striatus* (Koch.)

FAM : LYCOSIDÆ.

GEN : PIRATA (Sund.)

Pirata piscatoria Clk., Cambr., "Spid. Dors.", p. 351.

I have not, until towards the end of May, 1888, found the adult males of this fine spider, when we met with both sexes of it in

abundance along the edge of a pond on Bloxworth Heath diving in the water and hiding among water weeds. The females I had several years ago found here in August were, no doubt, some very late individuals of the early summer brood.

GEN : LYCOSA (Latr.)

Lycosa Farrenii Cambr., "Spid. Dors.," p. 546.

An immature example of this, as yet little known but very distinct, spider was sent to me from the neighbourhood of Cambridge in 1888 by Mr. Cecil Warburton. It would be probably found more abundantly if worked for in the fenny district.

Lycosa arenicola Cambr., "Spid. Dors.," p. 373.

This local spider was again found in abundance along the edge of the Chesil Beach, Portland, at the beginning of June, 1888, and I met with it also at the Fleet, near Chickerell, in August of that year.

FAM : SALTCIDÆ.

GEN : P H L E G R A (Sim.)

Phlegra fasciata Hahn., Cambr., "Spid. Dors.," p. 414.

After much searching only two or three examples of this well marked spider were found on its old ground at Portland at the beginning of June, 1888, and those were immature. The day was rather stormy and cold, and this would probably prevent their appearing, as they are sun-loving spiders.

GEN : MARPESSA (C. L. Koch.)

Marpessa muscosa Clk., Cambr., "Spid. Dors.," p. 554, and "Proc." Dors. N. H. and A. Field Club, vol. iv., p. 150.

Examples of this fine species were received from Folkestone from Colonel Le Grice in 1888.

GEN : EUOPHRYS.

Euophrys aequipes Cambr., "Spid. Dors.," p. 404.

I met with this minute spider again, though very sparingly, near the Chesil Beach, Portland, in June, 1887 and 1888.

GEN : ATTUS.

Attus caricis Westr., Cambr., "Spid. Dors." p. 563.

In the autumn of 1888 Dr. Blackmore sent to me, alive, an immature male of this very rare spider. It was still living a short time ago—January, 1889—and I have every confidence that under Dr. Blackmore's care it will in due time become adult. It was found by him in a swampy place near Salisbury. This is only the second recorded occurrence of this spider in Britain.

LIST OF SPIDERS ABOVE NOTED AND
DESCRIBED.

- Dysdera crocota (C. L. Koch), p. 128
- Prosthesima rustica (L. Koch.), p. 111, pl. A, fig. 1
- „ pedestris (C. L. Koch.), p. 128
- „ Latreillii (C. L. Koch.), p. 128
- „ longipes (L. Koch.), p. 128
- Drassus sylvestris (Bl.), p. 129
- „ troglodytes (C. L. Koch.), p. 129
- Liocranum domesticum (Wider.), p. 129
- Lethia albispiraculis (Cambr.), p. 129
- Tegenaria Guyonii (Guér.-Men.), p. 112
- „ cinerea (Panz.), p. 129
- Cœloetes pabulator (Sim.), p. 113, pl. A, fig. 2
- Hahnia elegans (Bl.), p. 130
- Pholcomma gibbum (Westr.), p. 130
- Theridion Blackwallii (Cambr.), p. 130, pl. A, fig. 3
- Crustulina sticta (Cambr.), p. 130
- Lasæola coracina (C. L. Koch.), p. 131
- Theridiosoma argenteolum (Cambr.), p. 131
- Enoplognatha caricensis (Fickert), p. 114, pl. A, fig. 4.
- Pedanostethus neglectus (Cambr.), p. 131
- Hilaira uncata (Cambr.), p. 132
- „ excisa (Cambr.), p. 132
- Tmeticus Warburtonii (sp. n.), p. 115, pl. A, fig. 5.
- Neriene clara (Cambr.), p. 118

- Neriene agrestis (Bl.), p. 118
 , , Huthwaitii (Cambr.), p. 118
 Walckenäera pratensis (Bl.); p. 119
 , , trifrons (Cambr.), p. 132
 , , crassiceps (Westr.), p. 132
 , , melanocephala (Cambr.), p. 132
 , , capito (Westr.), p. 119, pl. A, fig. 7.
 , , interjecta (Cambr.), p. 121, pl. A, fig. 6.
 Linyphia impigra (Cambr.), p. 132
 Leptyphantes miser (Cambr.), p. 133
 Xysticus luctuosus (Bl.), p. 133
 Oxyptila sanctuaria (Cambr.), p. 133
 Philodromus emarginatus (Schr.), p. 133
 Thanatus striatus (C. L. Koch.), p. 133
 Pirata piscatoria (Clk.), p. 133
 Lycosa Farrenii (Cambr.), p. 134
 , , arenicola (Cambr.), p. 134
 Pellenes tripunctatus (Walck.), p. 122, pl. A, fig. 9.
 Phlegra fasciata (Hahn.), p. 134
 Marpessa muscosa (Clk.), p. 134
 Hyctia Nivoyi (Sim.), p. 124, pl. A, fig. 8.
 , , prompta (Bl.), p. 127
 Hasarius arcuatus (Clk.), p. 127
 Dendryphantes hastatus (C. L. Koch.), p. 128
 Euophrys aequipes (Cambr.), p. 134
 Attus caricis (Westr.), p. 135
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EXPLANATION OF PLATE A.

- Fig. 1. *Prosthesima rustica* L. Koch., *a*, male enlarged; *b*, eyes from above and behind; *c*, palpus of male; *d*, natural length of spider.
2. *Cœlotes pabulator* Sim., *a*, male enlarged; *b*, spider in profile without legs; *c*, portion of palpus, shewing form of apophysis

on cubital joint ; *e*, corresponding portion of palpus of *Cœlotes atropos* Walck., shewing different form of same apophysis in that species ; *d*, abdomen of *C. atropos*, shewing difference from that of *C. pabulator* ; *f*, natural length of the latter spider.

3. *Theridion Blackwallii* Cambr., *a*, spider (*female*), enlarged ; *b*, ditto in profile without legs ; *c*, profile without legs.
4. *Enoplognatha caricis* Fickert, *a*, spider (*female*) enlarged ; *b*, ditto in profile without legs ; *c*, digital joint of palpus ; *d*, natural length.
5. *Tmeticus Warburtonii* sp. n., *a*, male enlarged ; *b*, female ditto ; *c*, female in profile without legs ; *d*, palpus of male ; *d'*, portion of ditto, shewing characteristic bristles on prominence at base of the digital joint ; *j*, *k*, portions of palpus of *Tmeticus scopiger* Menge, shewing difference in corresponding bristles in that species ; *g*, abdomen of *T. scopiger* (*female*) in profile, shewing different form and direction of genital process from that of *T. Warburtonii* ; *e*, nat. length of *T. Warburtonii* (*male*) ; *f*, ditto of *female*.
6. *Walckenäera interjecta* Cambr., *a*, male enlarged ; *b*, profile of cephalothorax without legs ; *c*, palpus ; *d*, natural length.
7. *Walckenäera capito* Westr., *a*, male enlarged ; *b*, profile without legs ; *c*, portion of caput

from above and behind, shewing eminences and eyes; *d*, ditto from in front; *e*, palpus; *f*, natural length.

8. *Hyctia Nivoyi* Luc., *a*, male enlarged; *b*, female ditto; *c*, male in profile without legs; *d*, male, natural length; *e*, female ditto.
9. *Pellenes tripunctatus* Walck., *a*, male enlarged; *b*, profile without legs; *c*, natural length.





On a New British Worm, *Allurus Tetraedrus*.

By FREDERICK O. P. CAMBRIDGE, B.A.



THE occurrence of any new form of animal life is always interesting, more especially in such a well worked and circumscribed area as that of Great Britain. Nevertheless it seems somewhat difficult to become very much elated over the discovery of a new species of earthworm, because worms are usually regarded as almost the lowest form in the scale of creation, and are not remarkable either for diversity of form, beauty of colouring, or for any particular intelligence displayed in the carrying out of those functions which are necessary to their existence.

The late Mr. Charles Darwin has, however, given a much greater interest to the study of the modest worm. In his work on earthworms and vegetable mould he has shown that the whole of the surface soil of our earth has passed and is continually passing through the bodies of earthworms. This one fact will prove how important a factor the worm is in determining the conformation of the surface of the earth.

So much for worms in general !

The discovery of that particular worm which has given occasion to the writing of this paper was not due to a love of worms innate

in the discoverer. Agreeably to the invitation of Dr. Benham, of University College, London, published in the *Field* newspaper, we forwarded parcels of worms for his inspection and determination. Amongst these were some small worms, about an inch in length, found beneath the stones of the gravelly bed of a stream at Hyde, near Bloxworth. These proved to be of a different genus to the ordinary earthworm, the genus and species not having, up till then, been recorded as occurring in Great Britain. As Dr. Benham wished to ascertain whether they were really aquatic worms or not, we took some trouble in determining exactly where and under what conditions this interesting worm occurred, with the result that the worm was pronounced semi-aquatic. It always occurred *below* high water mark, and seemed in no way inconvenienced when totally submerged, as we often found them under the stones 3 or 4 inches below the surface.

The name of this worm is "*Allurus tetraedrus*." The position of the four pairs of bristles with which each segment is provided and the position of the genital organs seem to be chief points to be noticed in determining the genus and species. Another small worm, "*Allolobophora Boëckii*," was found in some abundance in the wet bed of a marshy swamp at Morden Park. These, too, are interesting from the fact that the bristles, instead of being arranged in four pairs, are arranged as eight almost equidistant and single bristles. Those of the ordinary worm, "*Lumbricus terrestris*," are in four pairs, and confined to the ventral surface. Those of "*Allurus tetraedrus*" are in four equidistant pairs, each pair forming the angle of a square when viewed in transverse sections. (See diagrams.)

The aquatic worm, "*Allurus tetraedrus*," was found, soon after its discovery in Dorsetshire, in a stream not far from London, and we have just now, December 6th, found it also in Essex, living under conditions similar to those under which they were discovered in Dorsetshire.

Dr. Benham is about to publish a Monograph on British earth-worms, and doubtless the new worm will be duly honoured with a figure and description in that work.

We must finish this short and imperfect sketch, expressing a hope that we may some day be able to contribute for publication something on worms more worthy of the Dorset Natural History and Antiquarian Field Club than these few hurried lines.

F. O. P. C.

Broxted, Essex, December 7th, 1888.



ALLOLOBOPHORA.



LUMBRICUS.



ALLURUS.

Transverse sections showing the disposition of the eight setæ in the three genera.





Lantern Tower, Wimborne Minster.

By W. J. FLETCHER, F.R.I.B.A.



At our last meeting at Cerne I was asked by our worthy Secretary to say a few words to you to-day on any special point of interest connected with this beautiful Minster. Accordingly I have selected the central or Lantern Tower as being the oldest and most interesting portion of the church.

You are all probably well acquainted with the early history of Wimborne Minster and the legend which tells us how Cuthberga, daughter of Kenred, king of the West Saxons, built an Abbey at Wynburne in the early part of the eighth century. No part of the present church can, however, have existed in that good lady's time. Indeed, it seems doubtful if the Saxon Church occupied the same site as our present Minster. The church seems to have originally consisted of a *Choir*, with probably an apsidal termination, *Transepts* (about half their present length), *Nave*, and *Tower*.

The *Choir* had small *Chapels* on each side, and the *Nave* had very narrow side *Aisles*. Before, however, I say anything about the Lantern Tower, let me call your attention to one of the most interesting features connected with the church—viz., that the architects and builders who succeeded each other at the various

periods in which the church has been erected made their work subservient to the existing building, and altered the same as little as possible. No masonry that could be retained was got rid of, and everywhere they left behind them abundant proofs and evidences of what the building was before. Some authorities give as a reason for this the probable poverty of the establishment ; but, whatever it was, we ought to feel very grateful to our forefathers for retaining so much of the old structure in their altered plans, &c.

This fact strikes us on comparing the Lantern Tower with similar towers built in the same style and about the same time—York, Lincoln, Winchester—where, generally speaking, the Norman work in the upper parts of the towers has been altered, and transformed into the style of architecture prevalent at some later period ; but in this case we see the tower very much the same as when it was built, six or seven hundred years ago.

Let me first call your attention to the lower compartment of the tower, which, no doubt, formed part of the original church, with its four massive piers and arches having two plain orders. The piers have double shafts, supporting the central bold order, while single shafts support the outer orders. The capitals and bases are very plain ; but, taken as a whole, the piers and arches convey the idea of strength and stability for which they were designed.

The Eastern and Western Arches are wider than those on the North and South, arranged, no doubt, to allow as wide and extended a view of the High Altar as possible. Although there is so much difference in the width of these Arches, the springing and apex of them all are cleverly arranged to begin and finish in exactly the same plane. This has been effected by lowering the centres, from which the wider arches are struck below the springing, and forming what are called “depressed” arches, and by raising the centres of the narrower ones above the springing, forming what are termed “stilted” arches. The chancel being about 18 inches narrower than the tower, the walls on each side are brought forward and take the place of the column which should have supported the outer order of the Arch at the East side.

Above the lower compartment of the tower thus described are three other stories. The first of these is the Triforium or gallery in the thickness of the wall. You will notice that each face of the tower has two pointed relieving arches, and each of these encloses 4 circular-headed arches with shafts of Purbeck marble. The capitals are rudely carved with ornamentations almost Classical in character, and between each relieving arch are cleverly carved heads, the one on the North side being particularly worthy of notice. - The triforium has openings on all four sides of the wall externally, which formed the entrance over the flat wooden ceiling of the Norman Church. The walls of the tower are about 4ft. 6in. thick at this height.

Above this compartment comes the Clerestory with two windows on each face with a similar Triforium or passage, which runs round it. The windows have circular heads with a lancet-shaped relieving arch between. The windows are widely splayed, and have detached shafts at the angle of the jambs. At this stage the tower is beginning to be more richly ornamented. The lancet-shaped arch is repeated on the outside, as well as the shafts, showing plainly that it was built at a later period than the lower compartments of the tower.

You will observe the detached columns running up the angles of the second and third compartments supported on carved heads or busts, broken by bands, and also the striking feature formed by the staircase at the North-west angle of the tower.

The upper or third story of the tower is quite plain inside, where it is hidden from view by the beams and ceiling of the compartment below, but externally it is very beautiful, the masonry being formed into an arcade, continued round the tower, which forms seven pointed arches on each side, the mouldings of which are very rich and fine. Of these seven arches five were originally open on each side ; but all, except the centre one, have, from time to time, been walled up to strengthen the tower.

A very bold corbel table completed the original work. At the interior angles of this story are the squinches or broaches which supported the spire.

The heavy Classic parapets and pinnacles which are now the finish of this tower were erected in the year 1608 after the fall of the spire.

Also note that the small arches which abut against the tower piers in the lower compartment are similar in character to the main arches in tower, and that the ornamentation on the capitals of those in the chancel has been worked at a much later date. The capitals were originally the same as those in the tower arches.

We find by the old church accounts that the "Spyer" had for many years been getting into a bad state of repair.

On page 168, A.D. 1565, we find entered :—"Reparacyons of the Spyer, amounting to £15 10 9d, xxvij barres of iron wayng lxv pounds vijs vjd, vij boltes of iron xijd, lxij barres weying cexxxij pounds xlvijs ivd, iv bushills of coals xd."

In 1530, page 78 :—"Masons wages for poynting of the spere."





Canford Church.

A PAPER READ BEFORE THE DORSET FIELD CLUB ON
JULY 25TH, 1888.

By the Rev. Sir TALBOT H. B. BAKER, Bart.



E stand in a church, the walls of which, for the most part, and excepting the west end and the two porches (which are palpably modern), date back from our late Norman, or early Plantagenet, kings. Let us note the significance of that fact. On these walls have beaten the storms of, at the very least, 700 years. The action of frost and thaw, of rain and sunshine, destructive of any stone but the hardest, especially when rapidly alternating (as so constantly happens in our variable climate), has been attempting their disintegration, either directly on their surface, or indirectly, through whatever roofing may have covered them, which, from disrepair, assuredly at times has let damp into them. Ignorance or fanaticism might have been elements in their destruction, or the taste or fancy of succeeding builders to the great, the mostly unknown, architects of the Norman style. The latter is a constant cause of the comparative paucity, indeed, the rarity, of entire Norman churches. The Perpendicular architects were the chief offenders in this way. Take Winchester and Gloucester Cathedral naves *e.g.*, and see how their massive piers are

—in the former instance carved, and in the latter cut in half—to be faced by Perpendicular work, and judge how the operations of the older builders were interfered with by the more modern.

Then, as regards their chancels, the development of doctrine and the elaboration of ritual connected with the Altar services during the middle ages, necessitated more space. Thus, at that noble ruin, Fountains Abbey, and at stately Durham Cathedral, the chancels are of a later date, and enclose a far wider area than the original Norman constructions. Then, lightning and fire have conspired to demolish, at least, in part, as many of our more modern, so a proportion of our Norman churches. Sherborne Abbey furnishes a familiar example of the destructive work of fire, partially consuming a handsome Norman edifice. So when we find, as here, a building, the greater part of which may be attributed to the Norman period, as far as its walling is concerned, we are apt to prize it as something precious and noteworthy.

I think there is conclusive evidence that the chancel, and portions of its adjuncts, the tower, and the nave, with its aisles, are Norman, but, I should say, not of the same period. In giving an opinion on this point I feel considerable diffidence, as becomes an amateur, who never has made a serious study of Church architecture, and just knows enough about it to be aware how difficult it is to discriminate between original work and later additions, and to pronounce upon the characteristic mouldings of each style.

Hesitatingly, then, I would pronounce the chancel portion to be of older date than the body of the church. The arches opening out of the Sacraeum are very rude, springing from square piers, and from the plainest possible imposts. And the same remark applies to those connecting the chancel with its aisles. But the arches between nave and aisles, and those which form the doorways, are considerably enriched, not, however, with the ordinary Norman mouldings of the later date—the zigzag, the billet, the chevron—of which there is no specimen here, but with a deeply chamfered roll-crease moulding, which is turned up at its terminations on the arches, effectively. Now, the richer mouldings denote a later period

—in Norman architecture, certainly. Hence I argue that the chancel is earlier than the nave. But structurally it has undergone more change. The arches to which I have alluded, at the extreme east end, are similar. They must have communicated with important side chapels, of which the one on the north has entirely disappeared, and the southern one has been replaced (as I conjecture) by a later addition; which, however, I am bound to say, on the testimony of the venerable clerk, tradition points to as the oldest part of the church, but in which I fail to see any Norman work at all. It is built of a whiter coloured stone for the most part, a stone which must have come from a different quarry. It was long used for a curious purpose—as the Consistory Court of the Royal Peculiar of Canford. The arch connecting it with the chancel aisle proper seems to be of the Decorated period. And now as to these chancel aisles, I judge that the north one existed from the first by the presence of three corbels on the exterior of the centre chancel wall. These are fixed—2 on a lower level, about 7' from the floor, and 1 about 2' above. If the latter did not serve to support the strut of a roof, it and those below it were intended for some inside and not outside ornament. As to the south chancel aisle being part of the original structure, I would call attention to the existence of one jamb, and half the top of a round arch in the external face of the dividing wall between it and the centre chancel. Assuming that this must have been the aperture of a window, it points to this aisle being a later addition. On the other hand, there is no evidence of any such addition in the face of the exterior south wall. One feature in the interior north chancel main wall perplexes me. It is a portion of a recess, which has the appearance of the side and segment of a larger arch than any of the arches below it. It is not in the position of a relieving arch.

Passing from the chancel to the nave, the first point of notice is the opening in the arcade between the middle and south aisle of the latter. This is the very commonly found door to the rood-loft, or the narrow platform on the top of the screen which enclosed the chancel, on which stood, in wood carving, the Crucifixion scene,

This door, as so often happens, had been blocked up, and was re-opened at the time of the restoration, a few years ago. A difficult question is suggested by the sexfoil openings, a pair of which are old. The western pair are imitations. That the earlier pair were meant to admit light is what naturally occurs to the mind. But how, when their bases are below the top of the arches which they stand between, and when an early roof must have covered the entire opening, is a great puzzle. Of the latter fact, proof is afforded by the existence of a string-course on the east wall of the north aisle, against the tower, which I interpret as shewing the original rake of a lean-to roof. This, I repeat, must have run up above the top of the sexfoil on that side. But many changes in the roofing of aisles may have taken place in 700 years.

Hutchins, in his first edition, speaks of the church thus : "The whole fabric is very ancient, low, dark, and irregular." His account of its darkness is true enough. The original windows are very small, even for Norman work. There are 5 of these, 3 in the south and 2 in the north aisle. They have somewhat peculiar step or ridged splays to cast the light downwards. All but one have on the outside a rudimentary trefoil heading, and all have a tendency to a top pointing, evincing the lateness of the work of this part of the church to my mind, and its verging towards the transition into Early English. And there is an undoubted Early English tendency in the moulding of the south door, the trefoil heading of which, though not so pointed as it would have been, later by a quarter of a century or so, is a proof of the rising influence of that style on those that built it. Yet the capitals of the pillars in this and in the north door are, as are also those of the massive nave piers, unquestionably Norman, and the mouldings round the doors are similar to those which characterise the nave arches. I call them the roll-crease mouldings, though I believe hood mouldings is the more correct term. The two holes in the walls on either side of the entrance by the south porch should be noticed. They are evidently intended for the bolt which fastened

the door. Such an arrangement for hindering intrusion—it could scarcely have been for anything else—is by no means common. Still, other examples of it are found. The larger windows in the aisles and in the Consistory Chapel are late Perpendicular, and we owe the builders of that style some gratitude for letting in a good deal of light upon their predecessors' work. They have the step splay of the earlier windows. From the engraving in the 2nd edition of Hutchins it would appear that the east window was then, when he wrote, of the same character.

The font is octagonal. Its bowl and supporting columns are of Purbeck marble, much worn. In shape it might be co-eval with the church; but the carving on its 8 sides suggests Decorated work. There are some holes in its rim, which, perhaps, indicate its once having had a pointed cover.

The north door has two detached pillars, with a band round the centre of their shafts, but with the capitals carved with the typical Norman ornament of the Church—the truncated Acanthus. These are of a fine, white stone, resembling Portland, if not actually from those celebrated quarries. There are similar columns to the north tower windows. The tower is in an uncommon position. Norman towers were usually central, at the intersection of nave and chancel, and transepts. Now and then, as at Exeter, they stand at the termination of the transepts. This is constructed between and in the line of the north aisles of chancel and nave. The fraying by the bell ropes of the stone on the tops of the arches on its north and south sides is remarkable. I suppose, at least, that this is the cause of the deep furrows or notches that are cut in those tops. There are 5 bells, but of no great age, dating, indeed, only from the earlier half of last century. Mr. Williams has kindly furnished me with their inscriptions, which I will read after I have given the description in the 3rd edition of Hutchins of the exterior of the tower. I am obliged to be beholden for this to other eyes and another pen, for I cannot attempt to penetrate, with my extra short-sighted vision, the mass of ivy that clings to the tower. "It consists of 4 stages, each slightly smaller than the

other. The upper stage has on the east a two-light original window with a circular column, having a foliated capital in the centre and at the angles. There are flat buttresses at the exterior angles, which finish by a slope under a small string which marks the first stage." The same edition of Hutchins contains an account of sundry tombstones which once held brasses which were in the church. At present I can point to but one. It is laid north and south under the first step going up to the chancel, close to the base of the pier on the south. Two other matrices are placed in the same unorthodox position close beside the west wall of the south porch outside the church. Every one must admire the colour of the walls, due to the redness of the sandstone from quarries in the heath district not far off. The south wall appears to have given out early, to judge by the massive buttress which has been reared to support it, and which has fulfilled that office, judging by its looks, for many centuries.

Of the restoration work of ten years ago, I have only to draw your attention to the mosaics by Salviati on the east wall. Neither stall work nor pulpit has the substantiality of the work of the mediæval wood carver. Nothing is known as to whom the church is dedicated. The Rector will be glad of any information on this point.

BELLS AND BELFRY.

There are 5 bells, suitably hung for change ringing.

1. " Matt Wase Vic^r 1739.

J Corben—W. Wills C W."

" We are all cast and tuned right
By one founder William Knight "

2. " Lett love and friendship still abound

Whilst we do make a joyful sound" 1739 .

3. "Ring me steady in my place 1739
And I will answer with the base "
4. Vicar 1739 "I sound to bid the sick repent. Matt Wase
Willes C W "In hopes of life when breath is spent" J.
Corben, W.W
5. W. K B F 1739. "Let all well wishers rest in peace
That did our number first increase."

JOHN LEWIS WILLIAMS,

Canford Vicarage.





On Armorials of the Savage Family in Bloxworth Church, Dorset.

(WITH PLATE).

By JAMES SALTER, Esq., F.R.S., &c., &c., of
Basingfield, Hampshire.



WO achievements of armorial heraldry relating to the Savage Family, painted on the walls of the Manorial Pew in Bloxworth Church, were destroyed many years ago to admit of the erection of mural monuments of the Trenchard and Pickard Families. It is, perhaps, more than possible that those remaining may, sooner or later, be also "improved away." Such a proceeding would be very deplorable, and the only way in which its evil consequences can be mitigated is by an accurate record of them by illustration, as well as by description, being made and published.

The destruction of Family Memorials in the alterations, or the so-called restorations, of our churches is a public calamity and a grievous offence, for it not only obliterates an important part of the histories of the families implicated, but it thereby violates so much of our common national history.

An incalculable amount of harm has already been done in this direction, and the only way, to prevent this species of destruction from further obliterating evidence and history, will be a general

collection and publication of Church Armorials and other commemorative displays. Such a work has already been carried out for the county of Hants by the late Mr. A. J. Jewers. The MS. has been purchased by the British Museum, the library reference thereto being "Egerton MS. 2364." Well would it be if similar work had been done for every county in the Kingdom. Though there may be difficulty in compiling such comprehensive records, still, where armorial monuments are threatened with destruction, it is always desirable to publish them in some suitable periodical and with accurate figures, if possible. It is with such an object that I have written this memoir.

The Armorials of the Savage Family in Bloxworth Church are remarkable from the fact that they are painted on the wall itself and not on any raised element of stone or marble. They appear to have been executed at, or nearly the same time, and the escutcheons may be described as late Jacobean in character. The name of Savage is very widely spread, and appeared in mediæval times in different parts of England very remote from each other. Such scattered names may have arisen from the migration of family branches dispersed from a common root; or, more probably, the name, which was very likely to develope, started from several distinct centres.

Savage, of Rock-Savage, and of Clifton, co. Chester, appears to have been the earliest and the most important of the name, and has been formerly ennobled with an Earldom and a Viscountcy, as well as a Baronetcy, now all extinct. The arms borne by them were Argent, 6 lioncels rampant 3, 2, and 1, sable. These arms have been claimed by Savage, of Bloxworth, and appear on the escutcheons I am about to describe, and were accorded to them by that respectable antiquary and genealogist, Hutchins, the author of the "History of Dorset." But were they entitled to those arms? In other words, were they descended, as claimed, from a sixth son of the House of Savage, of Rock-Savage, co. Chester? The editor of the last edition of the "History of Dorset" suggests that the connection of the Bloxworth Savages with those of Cheshire is simply "ideal"

(vol. 1, p. 180), and he appears to have come to that conclusion upon little more than negative grounds—namely, that at an early period there was a family of that name in Dorsetshire, from which those of Bloxworth might probably have descended. In investigating the family history and such evidence as bears upon it I must confess that I had a latent wish to disprove the editor's suggestion ; but evidence too conclusive compels me to come to the same opinion as his. In the four earlier Heraldic Visitations of Dorsetshire (in the years 1531, 1560, 1565, and 1574) no allusion is made to Savage of Bloxworth. In the last visitation, however, that of 1633, there is an authentic pedigree of five generations, extending from Richard Savage (who was afterwards claimed to be the 6th son of the House of Rock-Savage) to George Savage, then 3 months old (Harleian MSS. 1153, 1166, 1451, and 1539). What adds immeasurably to the value of this pedigree, as evidence of the *then* claims and beliefs of the family as to their lineage, is the fact that it was signed as authentic by George Savage, then living, the third generation in the pedigree. This George Savage was grandson of Richard Savage, of Piddle Hinton and Bloxworth ; yet he did not claim that his grandfather was of the House of Rock-Savage, neither did he assume, nor was he accorded, the armorial coat of that ancient House, differenced for a sixth son. Presumably he would have done this if he was so entitled. No arms are prefixed to the pedigree in the Visitation Book, and the inference is that the Heralds (Henry St. George and Sampson Lennard) considered the family non-armiger. Neither is it said in the pedigree that Richard Savage is a sixth son of the Cheshire House, which the Heralds would have recorded had there been proof. The inevitable conclusion is that at that time (1623) this idea was not entertained, or that there was no evidence forthcoming to establish it. The Cheshire pedigrees are blank upon the matter, and, as far as I can discover, this supposed connection of Bloxworth and Rock-Savage is simply based upon the statements in Hutchins's 1st edition, and which he doubtless derived from members of the family when he wrote his history.

There was a family, named Savage, residing in Dorsetshire long before Richard Savage appears on the scene. About the year 1400 Alianora Govys brought in marriage to John Savage the Manor and Advowson of Long Critchell, and, what is more to the purpose, she also brought him an estate at Knoll (Knowle) near Corfe Castle and about ten miles from Bloxworth. The date is a century before the supposed migration of Richard Savage from Cheshire to Dorsetshire, and the locality is eminently suggestive of the source whence Savage, of Bloxworth, was descended ; and I understand that a tradition has come down to present times through the Trenchard and Pickard Families, that the Savages built, or, rather, reconstructed, the roof of Bloxworth Manor house, mainly out of timber from the ruins of Corfe Castle, which also seems to add strength to this account of their local origin. It was the custom of Henry VIII. after the dissolution to bestow alienated Church property upon neighbouring gentry, and it was from him that Richard and George Savage received Bloxworth, which had belonged to the Abbey of Cerne.

Moreover, Richard Savage, the 6th son of Sir John Savage, of Rock-Savage, was made a Freeman of the City of Chester in 1487, sixty years before Richard Savage, of Piddle Hinton, was seized of Bloxworth,—a difference of date which makes the identity of the two almost impossible ; and further, as the son of Richard Savage, of Bloxworth, died in 1610 the father must have been a young man when he received Bloxworth, and could not have been made a Freeman of Chester in 1487.

Though it appears thus evident that the Savage family of Dorsetshire did not come from Cheshire in the person of Richard Savage, who heads the Bloxworth pedigree, still they may possibly have been derived from that source in a more remote generation, and a tradition to that effect may have remained in the family. However that may be, they were certainly of antiquity and of gentle blood, as shown by estate and alliances. The history of the family, therefore, and the Armorials which they adopted, though probably under some error, are matters of real and considerable interest.

I will now proceed to describe and blazon the several achievements of the arms of Savage as they appear on the walls of Bloxworth Church ; and I will assume provisionally, for the purposes of description only, that Richard Savage, who stands at the head of the pedigree, was a sixth son of the House of Rock-Savage.

To make the descriptions clear and the references to persons intelligible I have appended a pedigree of Bloxworth Savage, taken from that of Hutchins, reduced in detail, but containing all particulars bearing on my subject.

The arms of Savage, of Rock-Savage, were argent, six lioncels rampant, 3, 2, and 1, sable. *Crest*: Out of a ducal coronet or, a lion's gamb erect sable.

A sixth son of the house would be entitled to these arms, with a *fleur-de-lys* for difference during his father's life, and which he and his descendants might adopt permanently, if he was able to set up a house of his own as a distinct and self-supporting family branch. This is what is assumed to have happened in the case of Richard Savage, of Bloxworth, and at some time a *fleur-de-lys* gules has been placed on the Savage coat for difference, as a permanent charge. And so the coat is blazoned by Hutchins. In the Armorials I am about to describe this difference appears in two instances, while in four others the *fleur-de-lys* has been replaced by a martlet (the difference for a fourth son) for no intelligible reason and quite at variance with the lineage in the pedigree, a mistake which could not have been made by a professional Herald, nor, indeed, by any one possessing a moderate knowledge of armorials.

The first escutcheon I describe is that of the arms of George Savage and Mary Astley, of Sherborne, impaled (fig. 1). The Savage coat is correct, with a *fleur-de-lys* for difference. The blazon of the Ashley coat is azure, a cinquefoil pierced ermine within a bordure of the last. Here is a mistake ; as Mary Ashley was an heiress her husband should have borne her arms over his own on an escutcheon of pretence, and not have impaled them.

The second achievement consists of the impaled coats of William Savage and Joan Page, of Uxendon, co. Wilts. The Savage coat

is here again correctly differenced. For Page or, a fess dancette between three martlets, within a bordure azure (fig. 2). Here is another mistake : as William Savage's mother was an heiress he ought to have borne his father's and mother's arms quarterly, impaling his wife's.

The third achievement is the most interesting of the set, consisting of six quarterings and an escutcheon of pretence. This coat belonged to Sir George Savage, son of the last named. It is clearly an amateur display, containing serious heraldic errors. Sir George adopts a martlet for difference instead of the fleur-de-lys, though he was the eldest son of his father, who bore the fleur-de-lys ; and he quarters the arms of his mother, which he was not entitled to do, as she was not an heiress. The first and sixth quarters in Sir George's coat are those of Savage. The blazon of the second is gules, a chief chequy argent and azure, with a crescent or, for difference. From its position and from the pedigree one would have expected the arms to be those of Willis ; but that is not so. The arms are those of Hansted, of Worcester ; but I have been unable to discover any connection between the two families. Welsted, of Wimborne, is the third quarter ; or, between three leopard's faces argent, a chevron ermine. The chevron was originally azure ; the ermine is either a mistake, or a difference for a family branch.

The fourth and fifth quarters are those of Ashley and Page, already blazoned.

The escutcheon of pretence is for Ann, daughter of Thomas Bower, of Spettisbury ; or, a bend vair, cotticed sable. As Sir George Savage bore this inescutcheon on the face of his shield he treats his wife as an heiress ; and this is further borne out by his son's armorials, in which Lady Savage's coat occupies the second and third quarters. These arms (fig. 4) Savage quartering Bower, have already been blazoned. The martlet is used instead of the fleur-de-lys, and a label, of three points gules, is borne, showing that Sir George Savage was living when this, his son William's coat, was painted ; the said son being unmarried at the time.

There are two other coats of arms, one (fig. A) representing the arms of Savage, with a martlet for difference and surrounded with a profuse mantle, gules lined argent; and another (fig. B)—the same coat impaling Bower. This latter marshalling is inconsistent with what has gone before. The coat can only mean that of Sir George Savage; but here he treats his wife as though not an heiress, whereas in Armorials, figs. 3 and 4, both husband and son treat her *as* an heiress.

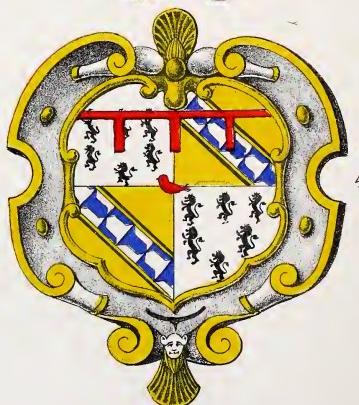
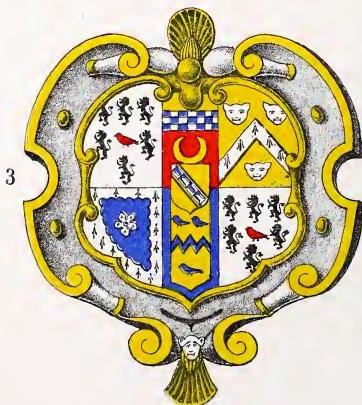
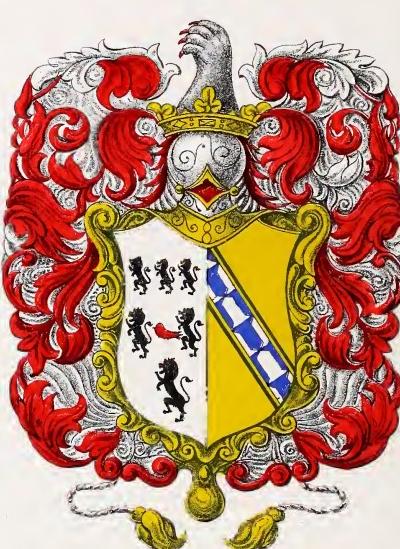
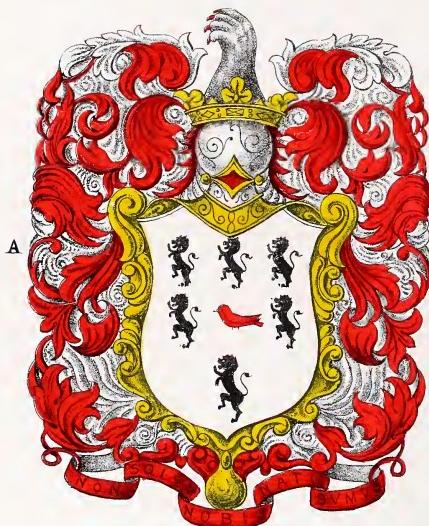
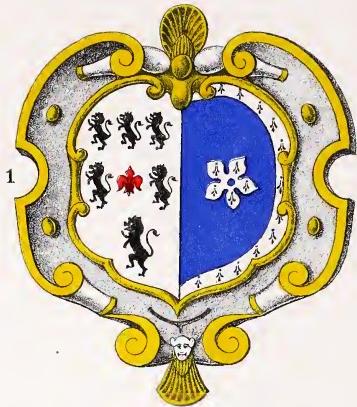
Such are the Armorials of the Savage family in Bloxworth Church. They appear to me to have been executed at one time, the date of the latest coat in the series. I think they are the result of one inspiration, and I have no doubt they were executed under the direction of Sir George Savage or his son William, or both, and about the year 1670, a little earlier, or a little later.

In conclusion I would remark that Richard Savage, who heads the accompanying pedigree, appears to have been of Piddle Hinton before he was of Bloxworth, and he probably acquired property at the former by his marriage with Agnes Willis, of that place. He was doubtless of gentle birth, and was the representative in his person of many good alliances in the county of Dorset. But he was certainly not the sixth son of Sir John Savage, of Rock-Savage, who must have been some 60 years of age at the time of the birth of him of Dorset. The record, however, of the Armorials of the Bloxworth family of Savage, as believed by them in later generations, and as setting out their marriages from the time of Henry VIII. to the Restoration, is worth preserving, and will save from destruction part of the history of an old Dorset family.

PEDIGREE OF SAVAGE OF BLOXWORTH IN RELATION TO THEIR
ARMORIALS.

Richard Savage, of Piddle Hinton and Bloxworth.	= Agnes dau. of — Willis, of Piddle Hinton.
William Savage, of Bloxworth d. 1610.	= Petronel d. of Robert Welsted, of Wimborne Minster died 1602. 3rd Quarter in Coat 3.
George S., of Bloxworth living 1623. Coat 1.	= Mary d. & h. of Gervase Ashley of Sherborne d. 1623. 4th Quarter in Coat 3.
William S., of Bloxworth Sheriff 1640. Coat 2.	= Joan d. of Richard Page of Uxendon, co. Wilts. 5th Quarter in Coat 3.
George S., of Bloxworth Kt. 3 mo. old Sep. 13, 1623. ob. 1683. Coat 3 & B.	= Ann d. of Thomas Bower, of Spettisbury. Escutcheon of Pretence on Coat 3.
William Savage Esq., of Bloxworth. Coat 4.	=





DESCRIPTION OF PLATE.

- Fig. 1.—The Arms of Savage impaling those of Ashley.
,, 2.—Savage impaling Page.
,, 3.—Savage quartering Hansted, Welsted, Ashley, and Page ; and bearing an Escutcheon of pretence for Bower.
,, 4.—Savage quartering Bower. A label of three pendants for an eldest son.
,, A.—Arms, Crest, Mantle, and Motto of Savage.
,, B.—Savage impaling Bower, Crest and Mantle.



Notes on a few of the Fish recently taken on the Chesil Beach.

By NELSON M. RICHARDSON, B.A.



URING the three years that I have been living near Weymouth several interesting fish have come under my notice which have been caught by the fishermen on the Chesil Beach opposite to my house, in the neighbourhood of the part which the Field Club visited when it came to Weymouth last August. I thought that a few notes on these fish might be interesting, though, as I have never studied ichthyology, I fear that my notes will be unscientific ones.

The Mackerel (*Scomber scomber*) is the staple fish of the Chesil Beach, and is what the fishermen fish for. It is caught from May onwards during the summer in considerable numbers, but has been comparatively scarce for the last few years. All other fish may be regarded as accidentally caught in the nets which are cast for mackerel. One side of a long and comparatively narrow net is fastened along a rope with corks at intervals, and one end of the rope is held by the men on the beach whilst a boat takes the net out to sea and drops it along a curved line a little way from the land, bringing the other end of the rope on shore at a short distance. Each end of the rope is then pulled by 8 or 10 men,

who walk along the beach for, perhaps, a quarter of a mile, gradually hauling in the net, and eventually pulling it on shore with the fish enclosed in it.

When a fish of any size is caught it is usually put on a waggon which perambulates the neighbourhood and then proceeds to Weymouth, and occasionally as far as Dorchester, if the fish remains in good condition long enough and is attractive to the public.

About a year ago a large sunfish (*Orthagoriscus mola*) was caught in the nets. It measured about six feet in length, and somewhat more between the tips of the fins. This fish is of a most extraordinary oval shape, nearly round, and has a habit of sunning itself on the surface of the water, and from this habit or from its round shape it derives its name. It is found occasionally on various parts of the British coast. The fishermen said that there was also a second sunfish, which they did not catch. The sunfish was accompanied by two small black pilot fish (*Naucrates ductor*), about 18 inches in length, of which only one was caught. Both sunfish and pilot fish were sold to a naturalist in London, and reached him safely about a week after their capture, after undergoing various adventures. In the course of their travels the railway company attempted to deliver the sunfish at a small private house in London, owing to a mistake of the fishermen, and on its being refused admittance they took it back to Waterloo and sent a telegram to Weymouth to say that its owner could not be found and that they did not know what to do with it. The pilot fish fetched £2, but the big sunfish only 30s. and its carriage to London, which was about £2 more. I may here mention that the large sunfish now in the British Museum was taken off the Chesil Beach in June, 1846 ; it was 6ft. 3in. long.

As to the connection of the pilot fish and the large fish which they accompany, the general belief amongst the Chesil Beach fishermen seems to be that each large fish has five pilot fish, who attend on him and direct him in finding food. When danger approaches in the shape of another large fish, or when the pilot

fish feel tired and in want of rest, the fishermen's belief is that they communicate their wishes to the big fish, who immediately opens his mouth, upon which they all swim down his throat and remain inside him until the danger is over. I think that some one said that he had seen them do so, but I do not now remember who it was.

Yarrell states that the evidence as to the object with which the pilot fish accompanies its large companion is contradictory, and says that some have considered that the pilot fish directs the large fish to its food; others that it merely goes for what it can pick up of the remains of the large fishes' dinner. He also says ("Yarrell's British Fishes," edition 1836, vol. i., p. 150)—"M. Geoffroy relates an instance of two pilots that took great pains to direct a shark towards a bait." On the other hand Colonel Hamilton Smith has furnished an account of an opposite character, which is thus related in Griffith's "Animal Kingdom, Fishes," vol. x., p. 636—"Captain Richards, R.N., during his last station in the Mediterranean, saw on a fine day a blue shark which followed the ship, attracted, perhaps, by a corpse which had been committed to the waves. After some time a shark hook baited with pork was flung out. The shark, attended by four pilot fish (*Scomber ductor*), repeatedly approached the bait; and every time that he did so one of the pilots preceding him was distinctly seen from the taffrail of the ship to run his snout against the side of the shark's head, to turn it away. After some farther play the fish swam off in the wake of the vessel, his dorsal fin being long distinctly visible above the water. When he had gone, however, a considerable distance he suddenly turned round, darted after the vessel, and before the pilot fish could overtake him and interfere, snapped at the bait and was taken. In hoisting him up one of the pilots was observed to cling to his side until he was half above water, when it fell off. All the pilot fishes then swam about awhile, as if in search of their friend, with every apparent mark of anxiety and distress, and afterwards darted suddenly down into the depths of the sea. Colonel H. Smith has himself witnessed with intense curiosity an

event in all respects precisely similar." It has also been suggested by Buckland that the parasites which are found on the large fish form the food of the pilot fish which accompany them.

Pilot fish sometimes accompany ships during whole voyages, one instance being related of two pilot fish joining a ship two days after she left Alexandria and attending her until her arrival at Plymouth 80 days afterwards, where they were caught. I once myself saw a small fish of some kind follow a baited hook put out from the stern of a sailing ship in the Mediterranean for several days, keeping its nose within a few inches of the hook all the time; but I did not see it attempt to eat the bait. It was calm weather, so that the ship was only moving slowly.

The next fish in point of size that I have seen from the Chesil Beach was a sturgeon (*Accipenser Sturio*), about six feet long, which was taken round in the usual way for inspection in a cart. It seemed to be very tenacious of life, and lived for hours after it was taken from the water. It was defended by five rows of long plates with projecting spines, and had a very hard and angular appearance. The four filaments hanging down in front of its mouth were very striking. The mouth itself was nearly round and small, something like a short indiarubber pipe, surrounded by thick swollen lips, and placed underneath and some way behind the end of its snout, and was toothless. This fish was cut up and sold in the neighbourhood, but I did not taste it. Yarrell says that it is very rarely met with in the open sea, being generally taken at the mouths of rivers, which it ascends to deposit its spawn. Small specimens are also rare, and it is supposed that they go out to sea when quite young, and do not return to the rivers until they are ready to lay their eggs.

In "Nature," Jan. 1871, p. 171, A. Schultz mentions that a peculiar phenomenon observed, especially in the Sturgeon, is a kind of winter sleep. At the approach of cold weather it seeks the deep parts of the river and remains there in a state of torpor, during which time it secretes a viscid mucus, which forms a coating over the entire body, called by the fishermen a "pelisse." During

this period it appears to eat nothing, the stomach being invariably found to be empty.

Another fish, of which I have a small example preserved in glycerine and water, is the lump fish (*Cyclopterus lumpus*). This little specimen was caught on the Chesil Beach and brought to me alive in a bucket. It was of a most beautiful bluish green colour and almost transparent, and covered with little bony tubercles. It had a sucker on the under side of its body with which it could hold on very firmly.

Another example of this species was also brought to me. It was much larger, about 18in. long, and most hideous in appearance. It had none of the beautiful hues of the small specimen, but was greyish brown in colour. In shape, however, it resembled the small one, and its tubercles and sucker were also similar. As I saw that it was considered good to eat—in fact, the Rev. J. G. Wood says (Wood's "Nat. Hist. Fishes") that the lump fish is in Scotland considered to be second only to the turbot—I had a piece cooked, but found it very watery and unpleasant. Yarrell does not speak so highly of its edible qualities, though he says that it is eaten in Scotland, but he adds that the beautiful colours and firmness of flesh are lost for a time after spawning. I should say that this specimen was at its worst.

In Day's "Fishes of Great Britain and Ireland" the following extract from the "Berwick N. H. F. Club," 1838, p. 174, occurs. "Johnstone remarks 'The paidle (lump fish) spawns towards the end of March and in April. At that season the hen approaches the shore and deposits her spawn among the rocks and seaweed within low water mark, and immediately afterwards returns to deeper water. The male then covers the spawn with his sperm, and, according to the testimony of our fishermen, remains covering it or near it until the ova are hatched. The young soon after birth fix themselves to the sides and on the back of their male parent, who sails thus loaded to deeper and more safe retreats.' Day also describes in great detail the gradual growth of the young lump fish, and quotes an account of the intrepidity of the male in

defending its nest from the wolf fish, upon the neck of which it first fastens by means of its sucker, and then inflicts a mortal wound with its teeth.

I now come to the boar fish (*Capros aper*), which has excited a good deal of attention on account of its very great beauty and its former rarity on the British coasts.

As a rule I find that the fishermen take very little note of anything except mackerel, but, as far as I can learn from them, the first appearance of the boar fish on the Chesil Beach was four or five years ago, when a very few were taken. They have been present every year since that time more or less, but this year they were exceedingly abundant during the early part of the season about April and May, hundreds being often taken in one cast of the net. They then became much rarer for a time, and about July appeared again for a few weeks, but not in such abundance as at first. Yarrell, writing in 1836, speaks of only two British specimens of this fish, one taken in Mounts Bay, the other procured from Bridgwater Fish Market. It is a Mediterranean and West Atlantic fish, occurring from France to Madeira. Buckland says, in his "Nat. Hist. of British Fish," that since its first appearance in 1825 in Mounts Bay it has gradually increased in abundance in certain limited tracts. In 1841 at Falmouth, and in 1843 at Plymouth, it appeared in numbers, and the fishermen state that within the last few years it has swarmed to such an extent as to have become a perfect pest, and that in many instances the trawlers have been actually obliged to change their fishing ground in order to get out of its way.

The boarfish is about $5\frac{1}{2}$ inches in length, $2\frac{1}{4}$ inches in depth, and $\frac{3}{4}$ inch in thickness. The mouth is retractile, and can be projected forwards in the form of a tube, about $\frac{3}{4}$ in. long. These fish generally keep their mouths drawn back, but can shoot out and draw them back very quickly, and some of them did this when lying on the beach after being taken out of the water, and also when alive in a tank. The colour of the body is bright scarlet on the back, shading into a beautiful silvery white underneath, some

being darker than others. There is generally a trace of darker red transverse bands on the sides, and the individuals which have these bands most strongly marked are the handsomest. The eye is very large and of a most beautiful golden red colour with a black centre.

When there were a good many boarfish in the net the herrings or other fish which were taken with them seemed to be frightened of them and came up first in the net, whereas the boarfish were found at the end. The herrings were a good deal pricked by the sharp spines of the boarfish, and it is just possible that the fishermen's idea that the boarfish frighten away other fish may have some foundation, as the last season has been an exceedingly bad one for mackerel; in fact, the fishermen have not had a good season since the boarfish appeared on the coast.

Thinking that the Brighton Aquarium might like some of these fish, I wrote to the Manager, who seemed much pleased, and agreed to buy some from the men and to send a tank for them. They turned out, however, to be most delicate fish, for in spite of the utmost care of the fishermen, who even transferred them direct from the sea to a bucket of water and thence to the tank without drawing them up on the land at all, there were many deaths before they reached the Aquarium. In the first attempt the tank was taken in a cart which carries away the fish from the beach over a very rough road, and this killed them all. In the second attempt only three out of twelve arrived alive at Brighton, and of these only one was well. In the third five out of nine were in excellent health when the tank passed my house on its way to Weymouth and the rest fairly well, but I have never been able to learn their fate, though I have written twice to enquire. I should fear that they had not been a success.

The last two fish that I propose to mention are small, but very curious and interesting.

One is the lampern (*Petromyzon fluviatilis*), of which a specimen was brought to me alive. It is a little greyish brown fish, about 8 or 10 inches long, a good deal like an eel, and furnished on the mouth with a sucker, with which it sticks firmly on to the side of

a basin, one's finger, or anything else. Wood says that it uses its sucker in ascending rivers. It makes a dart up the river at a stone, sticks to it, and rests for a short time, then makes another dart, and so on.

Yarrell gives a most interesting account of the construction of the nest of the lamprey, which is very like the lampern in shape, but rather larger, and mottled on the back. He says, quoting Sir William Jardine (Yar. "Br. Fish," 1836, vol. ii., p. 451): "They are not furnished with any elongation of the jaw afforded to most of our freshwater fish to form the receiving furrows at this important season; but the want is supplied by their sucker-like mouth, by which they individually remove each stone. Their power is immense. Stones of a very large size are transported, and a large furrow is soon formed" (to receive the eggs). Couch says that the lampern makes a nest in a similar way, but that several unite to form a joint spawning bed. Yarrell says (p. 454) that he believes that the lampern generally remains all the year in the river and does not visit the sea; but this specimen was taken off the Chesil Beach, not near the mouth of any river.

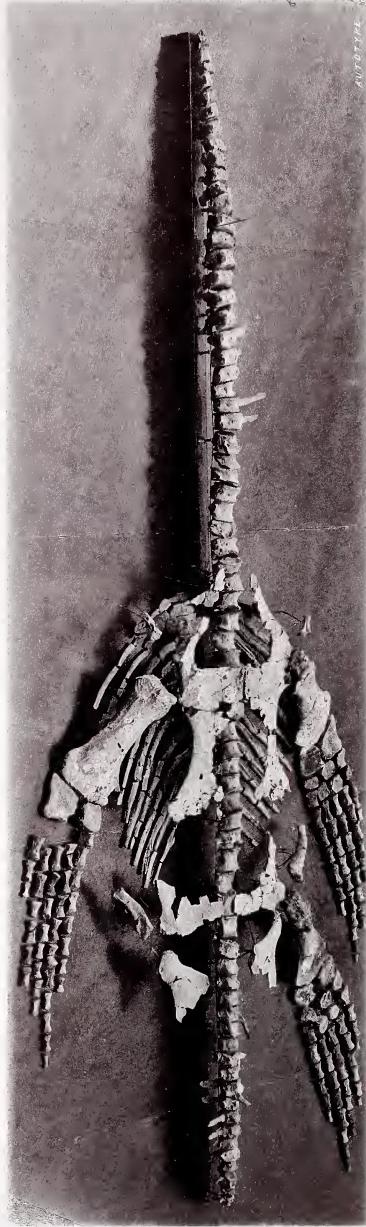
The last fish is the great pipefish (*Syngnathus acus*), which I have not seen alive, but only know from having picked up a few dried specimens on the Chesil Beach. Their shape is very curious, like that of a thin eel about a foot long, with a long tubular mouth. Their movements in a rock pool are said to be most graceful, and they are also said to use their long noses for poking about in the crevices of the rocks for food.

Yarrell says (ii., 329), after describing the male fish, which has a pouch underneath near the tail: "M. Risso notices the great attachment of the adult pipefish to their young, and this pouch probably serves as a place of shelter to which the young ones retreat in case of danger. I have been assured by fishermen that if the young were shaken out of the pouch into the water over the side of the boat they did not swim away, but when the parent fish was held in the water in a favourable position the young would again enter the pouch."

In conclusion I may mention that a green turtle (*Chelonia viridis*) was found floating in the West Bay near the Chesil Beach by some fishermen. It was dead, and appeared to have been so for some little time. Most probably it was conveyed by a ship into British waters, but died before reaching land, and was thrown overboard.

I venture to express a hope that the few notes on fish which I have read may encourage some of our members who live by the sea to take up by the subject in earnest. I feel sure that it will repay their careful attention.





Cimoliosaurus richardsonii



Cimoliosaurus richardsoni, LYDEKKER (n. sp.)¹

SYN. *Plesiosaurus plicatus*, MANSEL-PLEYDELL.²

By J. C. MANSEL-PLEYDELL, Esq.,
F.L.S., F.G.S.



OWARDS the end of the Mesozoic age a remarkable diminution of the huge reptiles which swarmed in the seas of that period commenced, and at the beginning of the succeeding age, *Tertiary*, their annihilation was nearly complete, occasioned by great physical changes, especially affecting the relative positions of land and sea, the sea predominating largely over the land in Europe. We pass from strata of considerable uniformity and of immense thickness over large and extensive areas to beds of a great variety of structure, from deep to shallow seas,

¹ Catalogue of the Fossil Reptilia and Amphibia in the British Museum (Natural History), by R. Lydekker, Part ii., p. 240, 1889.

² Proceedings of the Dorset Natural History and Antiquarian Field Club, vol. ix., p. 26, 1888.

estuaries, and rivers. With one or two doubtful exceptions, not a single Mesozoic species passed up into the Tertiary strata ; the numbers of the new genera and species, greatly exceeding those of the previous age. Western Europe at this period had four considerable seas instead of one as now—the Anglo-Parisian, the Pyrenmean, the Mediterranean, and one which covered the western parts of France from Normandy to Nantes. As the chalk rose above the sea and underwent extensive denudation, a material diminution of temperature resulted, mainly through alterations of the ocean currents, which occasioned a disastrous result upon reptile life. During the deposition of the oolitic beds there was a complete uniformity, for, although occasional subsidences occurred, as shewn by the Oxford and Kimmeridge clays, with evidences of tide-level and shore conditions, no great or important break occurred. At the commencement of the Cretaceous age, on the other hand, there was a gradual submergence of land, accompanied by a considerable extension of the sea-area. The marine beds of Punfield, near Swanage, which rest upon the great fresh-water deposits of the Hastings sands, are a good illustration of this initiatory change. Its effects are remarkably shown in the Vale of Blackmore, where there is a great overlap or covering over of the upper oolitic beds by the chalk. The Hastings sands, Purbeck beds, and Portland strata are hidden, causing an apparent unconformity of the beds, as if the Lower Greensand had succeeded the Kimmeridge clay directly, without first covering over the intervening beds. Another subsidence and consequent invasion of the sea occurred during the deposition of the Upper Greensand, which spread itself over the oolitic formations as it passed on westwards, finally resting on the Trias of East Devon. These changes materially affected the climate and temperature of those parts which came under their influence, especially through the alteration of ocean-currents. What would the climate of the greater part of Europe be, if the Gulf Stream was stopped or deflected ? The Atlantic would be deprived of one-fifth of the amount of heat

it is now receiving in addition to what it has in virtue of the temperature of space. The temperature would be lowered to a condition of climate as severe as that of North Greenland at the present day. If, again, the warm currents of the North Pacific were to be stopped, the northern hemisphere would be subjected to an entire glaciation. The fossils of the Palæozoic age seem to indicate a uniform mild or temperate condition of climate, but not so in the succeeding Carboniferous age, which shows signs of reaction. The late Mr. Godwin Austin found large angular blocks in the carboniferous strata of France, which could only be accounted for by referring their inclusion to the agency of ice-carriage, by glacier or iceberg. Large blocks of granite are met with in Scotland in the detrital beds of the coal-basins, which Professor Geikie and other eminent geologists attribute to glacial action. A large block of crystalline rock resembling granite was found embedded in a pit of white chalk near Croydon, and with it were other smaller boulders, all water-worn and composed of a different kind of rock, together with a compact mass of silicious sand derived from the waste of coast line of crystalline rocks, of which there are none in the neighbourhood of Croydon. All had sunk together without separating, and must have^o been firmly held together both during the time that they were floating, and whilst sinking to the bottom of the cretaceous sea. Independent of seasonal changes, circulation between the surface and the sea-depths is aided by the co-operation of heat and gravitation. The Gulf of Mexico, which is not exposed to any cold supply of water from the North Pole, is a perfect reservoir of heat; further north, close to the shore of Massachusetts, is a cold current running southwards 60 or 80 miles wide. There are thus two currents of different temperatures running side by side in opposite directions and only mingling where their edges impinge upon each other. Again, the Gulf Stream divides itself into several channels, the water of which is warm where the channels are deep, and cold in the shallower channels, occasioned by the water, low in temperature, rising from considerable depths over submarine elevated ridges.

We can now see the influence ocean-currents had, as they have now, upon determining the temperature of the globe, and the consequent disastrous effect upon cold-blooded reptiles when suddenly lowered. We have not time to dwell further upon this part of the subject, nor to show that Europe had not at the commencement of the Tertiary age its present continental character, but an insular one, giving free access to the polar currents without the counteracting exchange of warm equatorial currents.

The nearly complete fossil before us belongs to that section of the extinct reptilian class included in the Order Enaliasaurian or sea-lizards, but subsequently divided by Sir Richard Owen, G.C.B., F.R.S., into the *Ichthyopterygia* and *Sauropterygia*; the former represented by the genera *Baptanodon*, *Ophthalmosaurus* and *Ichthyosaurus*, the latter by several genera. Until the year 1841 *Plesiosaurus* was the only representative of this order in Great Britain. At that date Sir Richard Owen removed from it two species, *Plesiosaurus grandis* and *Plesiosaurus trochanterius*, under a new genus—*Pliosaurus*. The fossils of this genus were first founded upon two limbs, one of which is preserved in the British Museum, the other in our County Museum. It had an enormous head, supported by a short neck, in which it approached the great freshwater Saurians of the present day, with characteristic vertebrae, having a tubercular rising in the centre of the centrum, and resembling *Plesiosaurus* in its fin-bones and elongated phalanges. Their vertical range was restricted to the middle and upperoolites, whereas *Plesiosaurus* extended from the Rhætic beds right through to the chalk. *Plesiosaurus* is characterised by a very long neck and a short tail. The vertebrae are deeper and more solid than those of *Ichthyosaurus*; the neural arches are ankylosed with strong outstretched transverse blades to strengthen the spinal column and to sustain the strain upon it in shallow water; coast-lines, estuaries, and rivers probably being the usual resorts of these monsters. Their remains have been found in the Wealden freshwater deposits. *Ichthyosaurus*, on the other hand,

lived in the deep seas, visiting the land only occasionally. It has a weak spinal column : the two faces of the centrum nearly meet in the centre, and the neural arches are unanchoylosed, in which respect it differs from *Plesiosaurus*. The humerus and femur of some *Plesiosauri*—e.g., *Plesiosaurus Manselii* have a third bone in addition to the ulna and radius, and to the tibia and fibula, which T. W. Hulke, Esq., F.R.S., names the *os intermedium*, and places it between the ulna and radius, tibia and fibula, the homologue of which is found in the front and hind limbs of some living Saurians. A very interesting morphological question arises as to the possibility of tracing the homology of these bones and their relation to the carpal and tarsal elements of the higher vertebrates. I have already referred to this splendid Plesiosaurian specimen in my paper on the fossil reptiles of Dorset, and expressed my opinion that it might possibly turn out to be *Plesiosaurus plicatus* of Phillips. I am now inclined to change my mind and to call it *Muraenosaurus Leedsii* Seeley, a subgenus of *Plesiosaurus* characterised by its shoulder and pelvic girdles having only one coraco-scapula and one obturator foramen, and by a difference in the union of the neural arches, as well as by distinct forms of the ulna and radius, tibia, and fibula. Possibly these differences will not be held sufficient by Mr. Lydekker to justify Professor Seeley's separation. This palaeontologist is now engaged in tabulating and arranging the fossil reptilian remains in the British Museum ; the result of his labours on the Crocodilia and Deinosauria will soon be before the public, as the volume is now in the printer's hands, and will be doubtless as invaluable an addition to Palaeontological literature as are his five volumes upon the Fossil Mammalia of our National Museum. The remains of this *Plesiosaur* were found in a bed of Oxford clay in the neighbourhood of Weymouth last winter, and through the indefatigable and intelligent industry of Mr. and Mrs. Richardson, of "Montevideo," they have been built up in their present satisfactory condition. The head is

missing, which is not surprising, as having only one articulation with the neck, and that an exceedingly small one, it possibly became detached before the carcase settled down in its grave of clay ; that a considerable time elapsed previous to its being finally covered over may be inferred by the aggregations of oyster shells upon the vertebræ and bones, which could only have been attached when the body was uncovered. The spinal column consists of 71 vertebræ, of which 31 are cervicals, 19 dorsals, 2 sacrals, and 19 caudals. The shoulder-girdle is nearly complete, consisting of coracoids, scapulæ, and pre-scapulæ, two fore and one hind limb (humerus and femur), small portions only of the pubes, the ischia and ilia, radius, ulna, tibia, fibula, carpal, and metacarpal bones, several phalanges, and ribs.

VERTEBRÆ.—The dorsal vertebræ resemble the last two cervicals, the centrum is rough, its height and length about equal, and both shorter than the breadth. In the fore part of the dorsal region the neural spines are inclined backwards, they then become vertical, and afterwards incline forwards. The neural-arches are not well preserved, only a few retaining their transverse processes. The centra are altered in form to allow the ribs to be raised on the neural arch ; their sides are compressed with a foramen near the middle of some ; the neural spines widen and are extremely compressed from side to side ; the position of the transverse processes remain the same throughout. The cervical and caudal vertebræ are characteristics of this long-necked, short-tailed family, by the non-attachment of the ribs to the shoulder-girdle of the former, and by the long chevron bones of the latter.

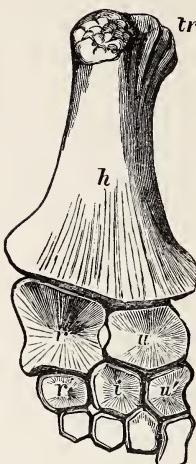
PECTORAL GIRDLE.—The coracoids have a short median symphysis five inches long ; and diverge from their posterior border, taking an outward diagonal direction, and terminating by a convex sweep outwards into an extremely thin dilated plate. The bones are thickest where the scapula and humerus articulate, forming a transverse ridge or keel. This ridge is equally marked on the dorsal as well as the ventral surface. Their width

immediately behind the articulation is 15 inches, the least width across is 20 inches. The length of the scapular-articulation is three inches, looking obliquely and forward, and lies in front of the ridge. The scapula consists of a plate which is ankylosed to the coracoid, and from which a bone rises and ascends towards the dorsal surface, making an angle of about 50° with the central plate. This plate is 6in. long and 4in. broad. The inner margin, which is thin and concave at the base, is a continuation of the curve of the front border of the coracoid bone. There is no indication of clavicle or inter-clavicle bones. The inner margin of the ascending plate is concave, the outer straight. The coraco-scapular foramen,* one of the differences upon which Professor Seeley forms his genus *Muraenosaurus*, is not subdivided into two foramina, as is the case with many of this family. This continuous foramen is bounded laterally by the concave inner border of the scapula and posteriorly by the anterior margin of the coracoid. It is 14in. wide from side to side and 4in. from the anterior to the posterior margins.

PELVIC BONES.—The pubes are thin, a small portion only of them is preserved, and there is no indication of the symphysis, this part of the bone being unfortunately lost. The outer margins are compressed from side to side, and are not so deep as those of the coracoid. The length is $18\frac{3}{4}$ in. Both the ischia are well preserved. Their length from the median line to the femoral margin is 8in. ; breadth at distal end, $5\frac{1}{8}$ in. ; at proximal end, $8\frac{1}{4}$ in. ; at the narrowest part, $2\frac{1}{4}$ in. The iliac bones are expanded at both extremities, so as to extend over the upper part of the head of the femur.

HUMERUS.—The third part of the proximal end of the humerus is cylindrical and thick ; it then widens into a broad distal end, shewing an articulate surface.

* It appears from a complete restoration now made by Mr. Richardson of the pectoral girdle that the coraco-scapular foramen was divided by a median bony bar as is now known to be the case in *C. plicatus* (Leedsii), of which the original restoration was erroneous.



Cimoliosaurus richardsoni.—Ventral aspect of part of the right pectoral limb $\frac{1}{8}$ nat. size; *h*, humerus; *tr*, trochanter of ditto; *r*, radius; *u*, ulna; *r'*, radiale; *i*, intermedium; *u'*, ulnare.

The ulna and radius are short, the radial portion concave; two of the carpal bones are trigonal, the rest are polygonal.

FEMUR.—The articular surface of the femur is deeply pitted and tuberculate. The proximal end is constricted below the head before it begins to expand. Both margins are nearly straight and gradually flatten out into a broad distal end. Length 1 $\frac{5}{8}$ in., breadth 8 in., $3\frac{3}{4}$ in. at the narrowest part of the shaft. The tibia and fibula, and several of the carpal and phalangal bones, are well preserved.

Since this paper was read last autumn before the members of the Club, the *Plesiosauridae* have undergone a complete revision under the experienced and critical eye of Mr. Lydekker, F.G.S., to whom I am indebted for his valuable assistance in the classification of this saurian. He refers Mr. Richardson's saurian to the genus *Cimoliosaurus*, which he distinguishes from *Plesiosaurus* on account of structural differences, especially in the shoulder-girdle, which are of so marked a character as to require a generic distinction.

He restricts *Plesiosaurus* proper to those whose scapulæ do not meet in the median line throughout their whole extent from the upper to the lower margin, but diverge anteriorly about half-way down. The scapulæ are rod-like, small, and narrow, and widely separated from each other, resting diagonally upon a long plate (*omosternum*), which is wedged into the coracoid at its summit, taking the place of the clavicle of mammalia and of some reptiles. The anterior portion of each scapula lies at right angles to the dorsal portion, which has a long projection. *Cimoliosaurus*, on the other hand, has large, broad scapulæ, which meet at the median line throughout, and are in the same plane with the coracoids, forming with these one shield-like plate. The size and strength of the scapulæ do not require the supporting bone *omosternum* of *Plesiosaurus*. The dorsal plates, as with the *Plesiosaurus*, are at right angles to the ventral, but differ in being short and narrow. Mr. Lydekker, finding the fossil possesses all the characters referable to *Cimoliosaurus*, gives it a place in that genus. It is, however, specifically distinct from *C. plicatus*, Phil., the only other known Oxford clay member of the family, and to which I referred it in vol. ix. of "The Proceedings." Among the other distinctive characters already described, the cervical vertebrae are shorter with flatter, terminal faces, and about 31 in number instead of 44 as in *plicatus*. Mr. Lydekker names it *Cimoliosaurus richardsoni* after its fortunate discoverer. *Plesiosaurus* proper is restricted to the Rhætic and Liassic beds, while *Cimoliosaurus* extends vertically from the Inferior Oolite to the Upper Chalk inclusive.





The Erosion of the Coast near Weymouth by the Action of the Sea.

By Mr. T. B. GROVES, F.C.S. (of Weymouth).



N old adage says "The drop wears away the stone not by the force but the frequency of its falling." How much more destructive, then, must be the action of the ever restless sea, whose motion is not only continuous but often of enormous violence, the effectiveness of which as a disintegrator is, as a rule, increased immensely by the intermixture of sand and gravel; to say nothing of the purely chemical action it exerts on certain rocks of a calcareous nature. The waste of the shore and the consequent encroachment of the sea has been noticed in all ages, but it was not until recent times that its vast importance was recognised, and a systematic attempt made to ascertain the rate of its progress and the *modus operandi* of the various forces which bring about the result.

At the Southport meeting in 1883 of the British Association for the Advancement of Science a recommendation was adopted by the General Committee to appoint a committee, of which Messrs. Topley and De Rance were to be secretaries, "for the purpose of enquiring into the rate of erosion of the sea coasts of England and Wales, and the influence of the artificial abstraction of shingle and other material in that action."

At the Montreal meeting in 1884 this committee presented a preliminary report, in which the importance of the subject and the urgent need for enquiry were insisted on, and pointing out that the problem could only be successfully attacked by many observers working with a common purpose and upon some uniform plan. To secure this uniformity a formidable list of questions had been prepared and circulated, and the co-operation of individuals and societies solicited. The hon. sec. of the Dorset Field Club promised, I believe, his aid, and under his direction I promised to collect the facts and observations relating to this immediate neighbourhood. I soon, however, repented of my rashness when I read over the list in question. I found to my dismay that answers were required to no less than 50 questions, arranged under 19 headings, whilst a hint was thrown out that sketches illustrating the points referred to would make the answer more valuable. It was evident that the work was to be done thoroughly.

At the Aberdeen meeting in 1885 the first detailed report was presented. It contained two general reports on the south-eastern coast of England—one on that part of the Sussex coast between Langley Point and Beachy Head, one on the coast of East Kent, and 20 particular reports of a variety of places, many of them on the south coast. Four of these referred to Dorset, and included Lyme Regis and Charmouth, Bridport Harbour, Christchurch to Poole, and lastly, to my intense relief, Weymouth, whose reporter was Mr. Bernard Henry Woodward, of 80, Petherton Road, Highbury New Park, London. Mr. Woodward's report is in the form of short answers to some of the questions formulated by the committee; but it would, I think, be more convenient if on this occasion the questions and answers were combined so as to form a continuous statement.

His report refers only to the coast north of the town of Weymouth, which he describes as a shingly beach, bordering alluvium, from about three furlongs north-east of St. John's Church to the south of Jordan Hill. The cliffs at either end of the shingle bank are of Oxford clay. The direction of the

coast line is north-east and south-west, and the prevailing wind south-west. The most important winds in raising high waves, piling up shingle, and causing shingle to travel are the south and south-east. He fails to give answers to questions six and seven referring to tidal currents and the range of the tides, and passes on to question eight, which he answers by stating that the area covered by the tide is chiefly shingle, with peaty alluvium exposed by the mouth of a stream south of Jordan Hill. The tendency of the shingle is, he states, to travel south-eastward and inland, the road that borders the shingle having been put back 60 feet during the last 30 years. The amount of shingle is diminishing, although the carting of it away is no longer permitted. The groynes which were erected to prevent the travelling of the shingle were wasted away in 1883. Since then blocks of Portland stone have been placed along the shore to protect the coast. The waste of the cliffs of Oxford clay below Jordan Hill he attributed more to atmospheric than marine agency, and points out that after a long dry season great cracks and fissures are made in the clay; then autumnal rains or winter rains and frost act with great destructive powers. To question 15—"Is the bareness of shingle at any of these places due to artificial causes?" he gives no answer. As regards the gain of land recovered from the sea, he points out the probability of the shingle beach having dammed up an old tidal estuary, now the alluvium of Lodmoor, and that further south the chief part of Melcombe Regis is built on marine sand and shingle, which has contracted the mouth of the river Wey, and left a kind of Broad known as Radipole Lake or the Backwater. The water in this is now artificially retained at low tide by a weir.

This report so limited in scope is nevertheless somewhat meagre with reference to what it professes to describe, and is, moreover, in some respects inaccurate. Strangely enough it omits all mention of the disturbance of old conditions caused by the building of the Portland Breakwater, to which are undoubtedly to be ascribed the denudation of the Preston beach, the filling up of Weymouth Bay

proper with sand, and the almost entire removal of that beautiful stretch of sands known as Smallmouth.

Before, however, going any further either in criticising the report or giving my own views of what has occurred in recent times with respect to the foreshore near Weymouth, I should like to explain that this paper is not offered in a dogmatic spirit, but rather as the contribution of a layman, with no profession of knowledge in this department of science, to the solution of problems which will, it is feared, soon have to be seriously confronted, and mainly with the view of exciting discussion, and so eliciting the opinions of persons having special acquaintance with the subject.

In pre-Breakwater times the waters of Weymouth Bay were agitated by all winds coming from between the north-east and south-east points of the compass, but from the latter came by far the most violent and destructive storms and the heaviest water.

For the Esplanade wall to be breached was no unfrequent occurrence, the damage usually occurring on that part between the opening to the sands and the top of Bond Street. The upper section was rarely injured except on very special occasions, such as the great November gale of 1824, and, perhaps, some others. But no sooner had the Portland Breakwater made substantial progress than its influence was felt in diverting the course of the waves coming in with gales from the south-east ; the heavy water fell year by year higher up the Esplanade in a northerly direction, and there, meeting with but feeble resistance, every year was signalized by a breach in the wall which cost the town several hundred pounds to repair. The wall opposite Brunswick Terrace, which, though of weak construction, had, hitherto, being helped by the beach in front of it, managed to hold its own, finally gave way, and its reconstruction practically completed the renewal of the sea wall of half the Esplanade.

The Breakwater still pushing forward, Greenhill appeared to be threatened. A sea wall was accordingly erected for its protection ; which was promptly knocked down within two years or so of its construction, just in time, in fact, to save the pocket of the

fortunate contractor. It was said that the wall was faulty both in design and construction, and having been built out too far from the land, the sea resented the encroachment in a summary fashion. The wall was never rebuilt; yet Greenhill suffered no material injury, as the heavy water soon passed on to the Preston beach, where its influence was successfully withstood by the then abundant accumulation of shingle. But when in course of time Jordan Gate was reached no such effectual barrier was met with, and the erosion of the coast line made rapid progress. It was feared that Preston valley would be invaded by the waters; consequently the Government was appealed to, and at its expense many thousand tons of Portland stone in large blocks were deposited on the shore to form a protection, which purpose it has effectually served. The disturbance of conditions did not, I believe, however, end there, for I had it on good authority that, owing to Breakwater influence, several hundreds of acres of land had fallen into the sea and been lost to the owners of properties adjoining the north shore. However, I will not pursue the subject further in this direction, but will, with permission, occupy a short time in considering the causes and probable effects of the denuding of Preston beach.

In stating that the tendency of the shingle is to travel in a south-easterly direction, the reporter was, perhaps, misled by information of what had been the case in pre-Breakwater times, the tendency being now south-westerly—*i.e.*, in the direction of Weymouth.

Before 1849, when the Portland Breakwater was commenced, there was practically no permanent displacement of the shingle. Should a south-easterly gale drive it towards Preston, the following north-easterly would return it to its original place and restore the equilibrium; but now not only is the south-easterly impetus removed, but it has been partly converted by reflection from the north shore into a force operating in the other direction; consequently the movement is south-westerly only, and has so continued, ever since the Portland Breakwater commenced to make its disturbing influence felt in the deflection of the wind-waves, and of

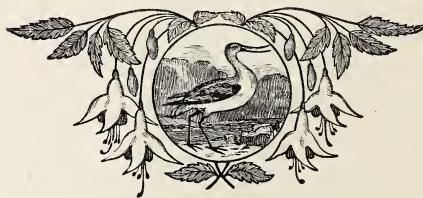
the tidal wave ; though the effect of the latter is probably limited to the movement of sand only. At various times attempts were made to stop the shingle by the erection of groynes, which were generally short-lived owing to original faulty construction and subsequent neglect. Of the groynes now on the beach one remained for years in the absurd position of being entirely open at the bottom. Now that it is too late it has been repaired and another erected to the south-west of it. This formidable structure is some ten feet high, but then, on the other hand, it is some 60 feet too short on the sea side, and 20 feet on the land ! A proof of its ridiculous inefficiency is afforded by the fact that at the present time the shingle is at the same height on either side of it, and that the Oxford clay is actually exposed in its immediate vicinity.

We have, in fact, to face not the possibility but the probability of the first heavy gale from the east breaking over, or, perhaps, through, the beach, destroying the road, and with it the pipes conveying the water supply of Weymouth, and finally flooding Lodmoor.

These unpleasant contingencies have recently been brought to the notice of the Government, but the application for aid has not, I believe, met with a favourable response. Any effectual remedy must necessarily be a costly one, and it rests with the civil engineer to say what it is to be. I will only venture one remark, and that is in reference to the natural accretion of fresh shingle. The only source (barring the carrying back bodily of what has been displaced) of flint pebbles that can be relied upon is the small yield furnished by the gradual disintegration of the chalk cliffs and the liberation of flints embedded in them. This goes on at an extremely slow rate, and it would probably require centuries to restore the Preston beach to its old condition by this means. As regards the movement of sand towards Weymouth, it is thought four or five feet in depth have been added during the last 20 years ; it has, in fact, become an evil. The tide now recedes too far, and, moreover, the condition of the sand at its southern end has

deteriorated. I venture finally to suggest to the Corporation of Weymouth that now has arrived the proper time for carrying out an old suggestion —viz., the taking in a large slice of the sands and converting it in some way to public uses, as has been done on three occasions at that Naples with which we have the audacity to compare our modest seaport and watering-place.

THO. B. GROVES.







Cerne Abbey Barn.

By H. J. MOULE, M.A.



BEFORE saying anything else let me express my thanks to Major-General Pitt-Rivers, R.A., the Rev. Sir Talbot H. B. Baker, the Rev. H. D. Gundry, Mr. Green, Surveyor on General Pitt-Rivers' estate, and to Mr. Sprake, tenant of the Barton Farm, for help of various kinds most courteously afforded to me.

The grand Abbey-Barn at Cerne seems hardly to have had its due name and fame among antiquaries. Whether looked at, however, as a piece of almost unsurpassable masonry, or as a noble design, it is one of the most noteworthy of Dorset mediæval relics. All the more grievous is the loss of the greater part of the fine open roof, which fell a few years ago. The barn is now the property of General Pitt-Rivers, who, as Government Inspector of Ancient Monuments, naturally took much interest in the structure. The General has shown me an extract from his estate journal, dated September 27, 1886, in which it is directed that the roof was to be replaced in deal in the same form as the old one, tiling it again with the same stone as before. In the following year, having inspected the repairs, he was much annoyed by finding that his orders had not been carried out; and the existing roof is constructed on modern principles, with tie beams. He was, however,

in time to save the porches, which have been reproduced in exactly the same lines as the old porches. And, outside, all that meets the view is in accordance with the old state of the roof; which now, as formerly, is covered with "heling stones" or stone tiles. All honour to the owner for delivering us from the eyesore of raw slate on the old, time-stained walls.

The building now standing is of nine bays, each about 12ft. 6in. long, giving the total length as a trifle over 112ft. But the barn either has been, or was intended to be, much longer. At the north end it is unfinished. There are there cheeks and springers of porch-arches, like those of the two existing porches. It is almost certain that to the north of the second porches there were, or were meant to be, four bays, as is the existing plan at the south. Thus we may add five bays, or 62ft. 6in., to the length, making it 174ft. in all. This is an enormous length for a barn, truly, yet more than 100ft. less than that of the gigantic barn at Abbotbury. I ought to say, however, that in a short notice of Cerne Abbas Barn in the British Archæological Association Journal for 1872, 200ft. is given as the length; but I do not see that any ground for this assertion is mentioned. The width is 30ft. inside, about 35ft. outside. The height of the walls to the eaves is 22ft. The height of the gables from the eave-level to the apex is 23ft. This gives a splendidly lofty pitch, the triangle being nearly equilateral. The base is about 34ft. or 35ft., and the sides more than 28ft. on the slope. The central bay of the walls is occupied on the east and west sides by a porch of singular, although, perhaps, undefinable, charm of design. The western porch is capped by a rich and beautifully carved finial. The arched doorways are bold and lofty enough for a load of corn to go in easily. As at Abbotbury, there is a small side-door to the porches. The four southern bays were long ago turned into the farm house—a transformation much to be lamented archæologically. Knocking through the door and window openings is said to have cost almost as much as a new house would have done. The old* roof over this part remains, although much

* It is about to be repaired.

decayed. By the courtesy of Mr. Sprake, the tenant, I saw the timbering, one truss of which is nearly open, in a loft or store-room. Its construction, as far as I could make it out, seems uncommon. From the wall-plates rise principal timbers, about 13ft. long only. Flat on the top of each pair of these lies a tie-beam or collar. These three timbers are trussed by two struts or braces from the middle of the collar, reaching to within a foot or two of the base of the principals. These braces are straight above, slightly curved below. The curved lines are continued by wall struts, notched or joggled into the principals, and carried down to the wall below. On the top of this lower truss rests another, triangular one, completing the ridge of the roof. This upper truss consists of two principals in continuation of those below. These upper principals have curved struts resting on the collar, and doubtless connected with a second collar above. But in my somewhat hasty inspection I could not satisfy myself perfectly about this. The roof is ceiled at the level of the top of the upper struts, which makes the construction there rather hard to make out. The roof, perhaps, looks as if, with the vast weight of heling stones, its thrust must be too great. But the mediævals knew what they were about. The walls are so good in themselves, and so well buttressed, that the thrust does not seem to have made them give an eighth of an inch all these centuries past. The buttresses, in their general design, are, perhaps, of a type more familiar in earlier style. They run up most of their height without diminution, and have three set-offs quite near the top.

I do not know of any evidence, or authoritative opinions, as to the date of the barn. The roof timbers are unmoulded, and almost all the stone work, where moulded at all, is plainly chamfered. No argument can be thence derived, therefore. Judging, however, by general contour, by pitch of roof, by style of finial, and by roll-moulding of door label, I set the building down as Decorated, say about 1350.

I now come to the masonry of Cerne Abbas Barn, better than which, for laying and facing within and without, can hardly be

seen. It consists of three kinds of stone. First there is Oölite, of the Portland formation ; but doubtless from some nearer locality, Portesham or Sutton Poyntz, perhaps. Then there is a considerable amount of Ham-hill sandstone, of which the buttresses, for instance, are mainly built. Lastly, there is a quantity of black flint, of which probably the whole core of the walls is formed, as well as a great part of the facing. Thus in the charm of varied colour the masonry is very delightful. But the feature to which I would chiefly draw your attention is the wonderful squaring and facing of the surface flints, in their thousands. It may be doubted whether Sussex,* Norfolk, or any other county noted for flint masonry, could show anything to beat that of Cerne Abbas Barn, taking quality and quantity into account. I found that a square foot of facing contains 25 flints, more or less. I estimated that half of the vast wall space inside, and two-thirds outside, are so faced. With these data, and the dimensions as above given, the astonishing result comes out that 172,600 is the number of facing flints in Cerne Abbas Barn. And the even, firm surface which they present must be seen to be believed. Outside, the flints have, of course, weathered as regards colour. But within they are still very black. In places, as in the West porch, the flint, oölite, and sandstone, with their black, light grey, and orange, are interspersed, forming a delightful chord of colour.

Such is a slight sketch of Cerne Abbas Barn. I have been so often asked respecting this and Abbotsbury Barn—"What were they originally? were they churches?"—that I ought, perhaps, to say in a word that it may be taken as an absolute certainty that they and all similar monastic buildings were barns, and nothing but barns, in design and use. But what kind of barns? Tithe barns—is the received answer. I doubt it. Buildings in the middle ages were vastly better than now, but roads much worse. Now, remembering that, think of what Mr. Roberts implies by calling this barn a Tithe Barn, as he does in the British

* It may be noted that flint dressing for masonry was a lost art in Norfolk 200 years ago. See Evelyn's Diary, October 17, 1671.

Archæological Association Journal of 1872. It is said in Hutchins, and in my childhood I often heard it from my Cerne Abbas nurse, that the barn before the house was established in part of it held all the corn in straw off a farm of 800 acres. Therefore, it would hold the tithe corn off 8,000 acres, more than 12 square miles. Now, on an average, the Cerne Abbas valley may, I think, be set down as a mile wide. If so, twelve square miles of it mean land stretching six miles each way. We must suppose some of the tithe corn to have been carted all that distance, on mediæval trackways, if the monks used as a tithe barn the building which we see, and not also the five other bays which may have existed. And, again, this estimate allows, what is at best most doubtful, that all those twelve miles of valley were titheable to the Abbey. It may be objected that I am forgetting the neighbouring downs, most of which show plough marks. Not so; but I submit that the cropping there was only at long intervals—the tithing from them very small. It would probably only bring up the crop and tithes of the down plus valley, in the middle ages, to the modern amount from the valley alone. No; with all diffidence I submit that here and at Abbotsbury and other monastic barns we see the store-houses not of tithe corn only, but also of the crop itself off the home farms of the convents. The Benedictine rule enjoined manual labour. I cannot but think that in that pleasant Cerne Abbas Vale the fathers had a goodly farm in hand, and did a small stroke of work on it while overseeing the lay brothers and others making longer days, as less taken up with matins and vespers, compline and lauds. Yes, when looking at that stately South porch, I sometimes have seemed to see a rough picturesque wain rolling in, high-loaded with ruddy wheat, its warm hue throwing into strong relief a black frocked farmer monk, with pitchfork on shoulder, going to help stow the corn from the Barton Farm tilled by the retainers, lay brothers, and adscripti glebæ, of the great Benedictine House of Cerne Abbas.



Description of a Species of *Epischnia* (*Bankesiella*) new to Science from Portland.

By NELSON M. RICHARDSON, B.A.



N the 19th of July, 1887, Mrs. Richardson and I each took at Portland a specimen of one of the *Phycide*, which we did not recognise, and which has turned out to be not only new to Britain but also to science.

The evening was not a good one for moths. It was very warm in spite of an east wind; but it was difficult to make the moths fly out of the bushes. One of the specimens was taken just as it was getting dark, and the other, I believe, about the same time. I have no suggestion to make as to the food-plant, as the herbage is very mixed in the part where the specimens occurred; my specimen was taken close to a large bed of nettles, but there were many other plants close by.

The season of 1888 has been a good one for many moths at Portland, and *Euzophera cinerosella*, a moth rather nearly allied to the present species, has been common; but, so far as I am aware, no more specimens of the *Epischnia* have been taken by any one, and the species is still only known by the two original captures.

I first sent the moths (a male and female) to Mr. Stainton; but he returned them as being unknown to him. I then sent them to

Mr. C. G. Barrett ; but he also failed to recognise them, telling me, however, that they came near to *Epischnia prodromella*. He kindly offered to send one of my specimens to M. Ragonot, at Paris, who returned it saying that in his opinion it was new to science.

The following description is taken almost entirely from the female ; the male had been out for some time and was worn, but did not appear to differ in the colouring of the wings from the female. The expansion of the wings in the female is 1" 1'" ; in the male it is slightly less. The breadth of the fore-wings is almost exactly one-third of the length. The costa in the male is regularly curved ; in the female it is much curved at the base and less so near the tip, whilst the intermediate portion is nearly straight. The tip is blunt and the hind-margin convex.

The colour of the fore-wings is light cinereous grey, clouded with dark grey, especially on the basal half of the wing. There is an inconspicuous narrow light greyish-ochreous patch extending about one-third of the way along the inner margin. The veins are streaked with dark grey. Several dark grey lines cross the wing from the costa to the inner margin ; but they are all very indistinct, and only traceable with difficulty owing to the wings being clouded with the same colour. The most distinct are two lines, one of which starts from the costa near the middle and runs towards the anal angle as far as the centre of the wing, where it turns nearly at right angles towards the base, and when at a short distance from the inner margin turns again at right angles before it reaches it. This line is double at the costa, and the two branches gradually approach each other and meet on the inner margin. The other line is one which runs from the costa near the tip, parallel to the hind margin, to a point near the anal angle, where it turns sharply outwards to the anal angle. There are slight traces of two other lines, one between the two above mentioned and one near the base ; but it is difficult to follow their course owing to the clouding of the wing.

A patch of the pale ground colour, less clouded than the rest,

extends obliquely from the tip to the inner margin. The fringes are of the pale ground colour, intersected by a dark grey line.

The hind-wings are very pale brownish-grey with a darker shade close to the margin, the fringes still paler, almost white.

The head, palpi, thorax, and antennæ are of the colour of the fore-wings, the thorax being the most clouded with dark grey; the body like the hind-wings.

The autennæ are about two-thirds of the length of the fore-wings, and simple in both sexes, though in the male they are a little thicker, and slightly curved at the base; the palpi are rather long (about $\frac{5}{8}$ "'), porrected, rather ascending, thickly clothed with scales, except the last joint, which is narrower and more naked; eyes very dark grey.*

This moth is very distinct from any other British species; but comes very near to *Epischnia prodromella*, H. S., *E. illotella*, Z., *E. asteriscella*, Mill., and *E. asteris*, Stdg. From *E. illotella* it may be at once separated by its larger size and much longer palpi, otherwise it is not unlike it in general appearance. M. Ragonot would place it between *E. illotella* and *E. asteriscella*. With regard to *E. prodromella*, M. Ragonot says: "The fore-wings in that species are narrower" (the ratio of the breadth to the length is 15 to 50, whereas in the Portland species it is 15 to 46); "the costa is more distinctly arched; there is a distinct discal spot, and the hind-wings are pure white." In addition to this I may mention that the angles formed by the line which begins near the middle of the costa are in *prodromella* very acute, being little more than 45° , whereas in the Portland species they are nearly right angles, and the light and dark parts of the wing are reversed in position. *Prodromella* has also a pearly gloss, whereas the Portland species is dull.

* Note.—In the accompanying plate of the head of the female the engraver has not quite correctly followed the drawing, so that in fig. 1, *b*, female, the terminal joint of the palpi should be blunter and the end of the 2nd joint more as in the male, and in fig. 1, *b'*, female, the head between the eyes should be broader and the scales on the neck half their present width.

Mr. Barrett kindly lent me specimens of *E. illotella* and *E. prodromella* for comparison. Of *E. asteriscella* I have not seen a specimen; but M. Ragonot says: "The principal difference I find between *asteriscella* and your insect is that the inner margin of *asteriscella* is ochreous, as in *illotella*; the thorax is pale reddish-ochreous-grey; the wings are slightly tinted with ochreous or pale brownish, whilst in your insect the fore-wings are more elongated, of a uniform cinereous-grey, clouded with dark grey; the veins streaked with blackish as in *asteriscella*; the thorax concolorous. The second line does not appear to be indented on the discal fold as in *asteriscella*. *Asteriscella* measures 22 to 23 mill., whilst the English specimen measures 26 mill."

Of *E. asteris* M. Ragonot says nothing, except that its food-plant is *Aster tripolium*, which does not, so far as I know, occur in the neighbourhood where my specimens were taken.

I have named the new species *Bankesiella* after my friend Mr. Eustace R. Bankes, of Corfe Castle, in recognition of his work amongst the Micro lepidoptera of Portland and Purbeck.

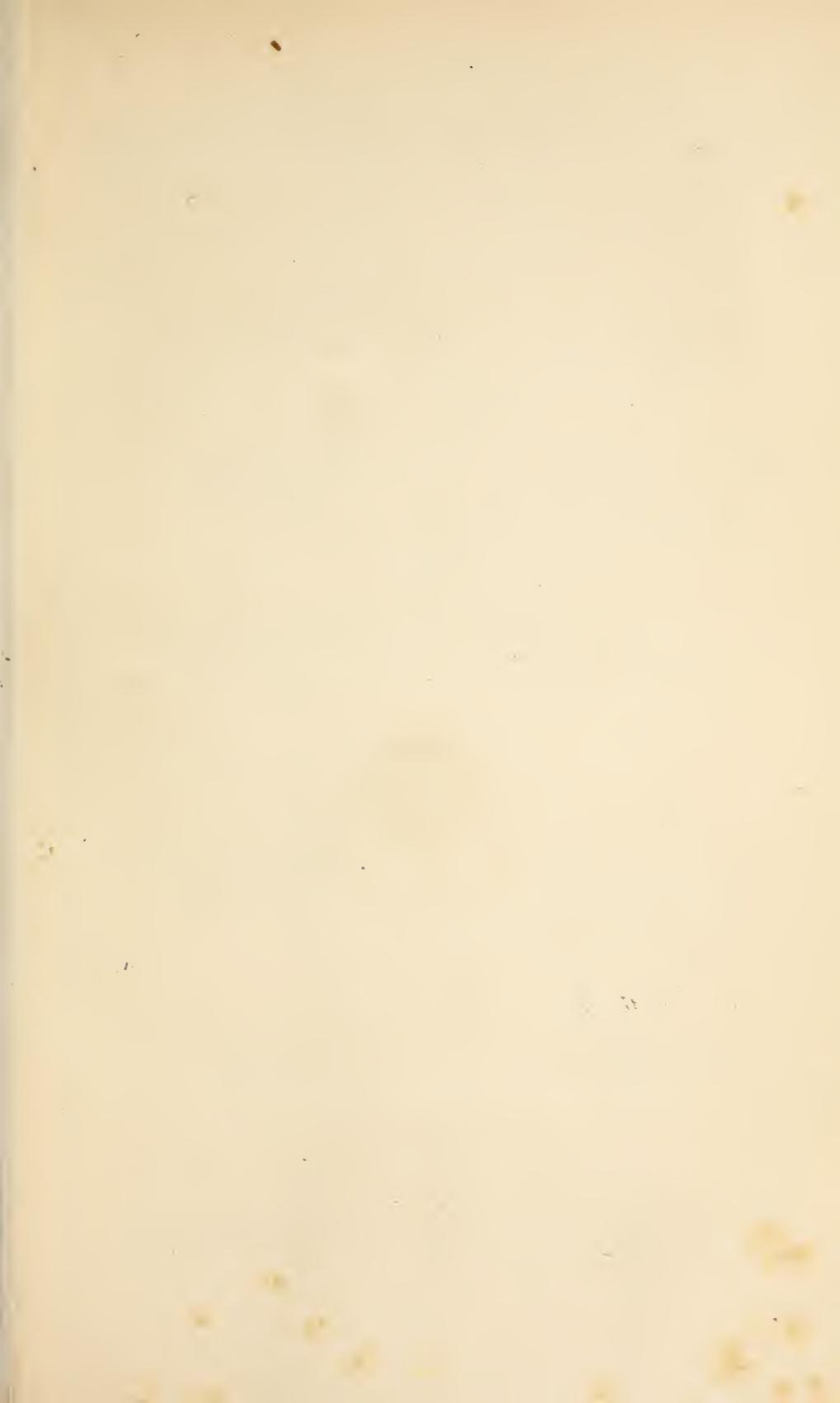
Since the above paper was written I have taken two more specimens of *E. Bankesiella*, both females, in very good condition, in the same locality as the first two, one on June 29th, the other on July 22nd, 1889. I am not aware that any others have yet been taken by any one.

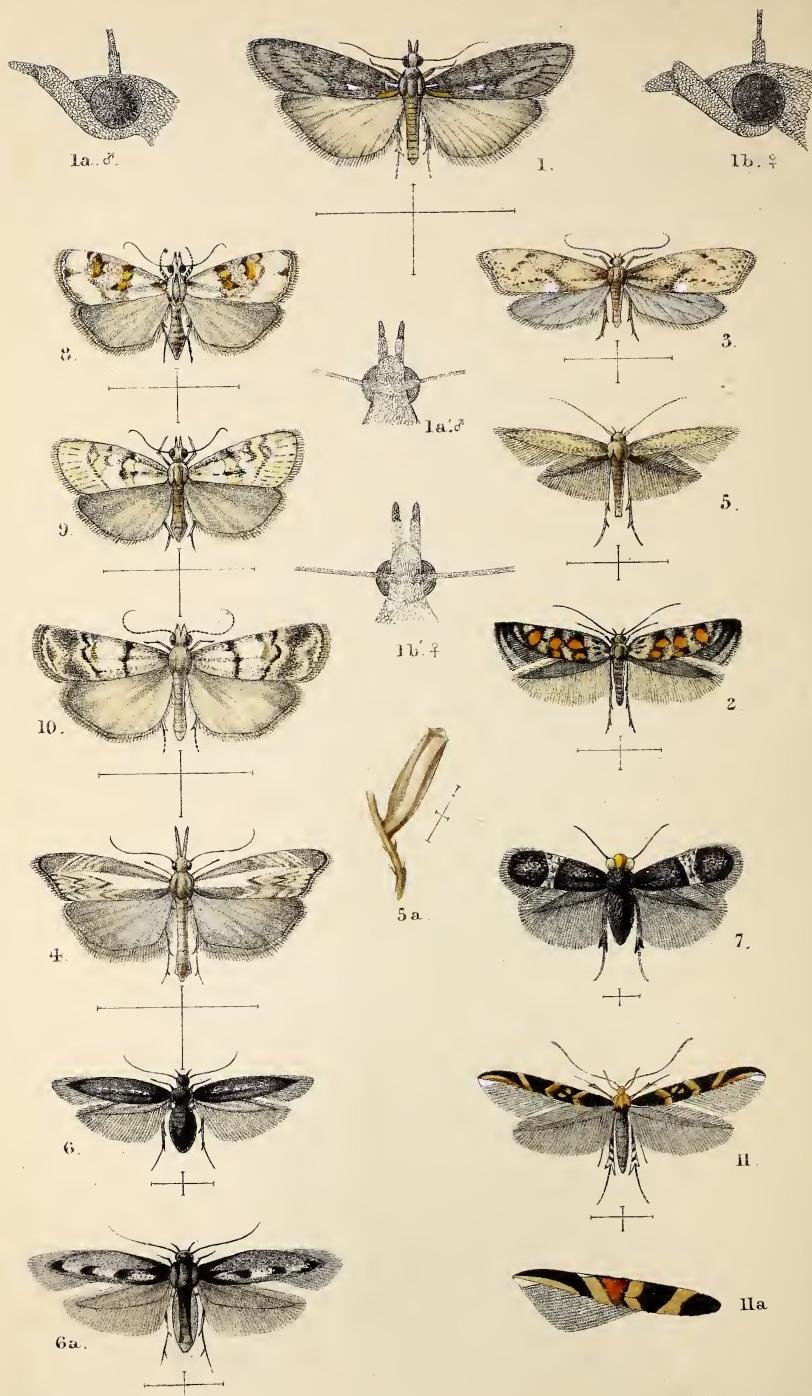
This species seems to be very constant in its size, colour, and markings, the only variations from the above description being that the light greyish-ochreous patch at the base of the inner margin has sometimes a brickdust tinge, and is in some specimens narrower and more ill-defined than in others, and that there is occasionally a tendency to a small whitish spot just beyond this patch and near the inner margin.

Fig. 7 represents *Nepticula centifoliella*, a species which, in this country, seems to be very local and generally scarce where it occurs. I found the larva feeding in the leaves of sweet briar at Portland, and have bred both broods of the imago. An excellent life history of this species will be found in Stainton's "Nat. Hist. of the

Tineina," vol. vii., p. 204. It has only been found in Portland so far as this county is concerned, and there seems entirely to take the place of the generally very common *N. anomalella*, which I have not observed at Portland, from which it is almost indistinguishable in the larva state, though the moths are quite different, *anomalella* having the fore-wings quite plain without any bar.



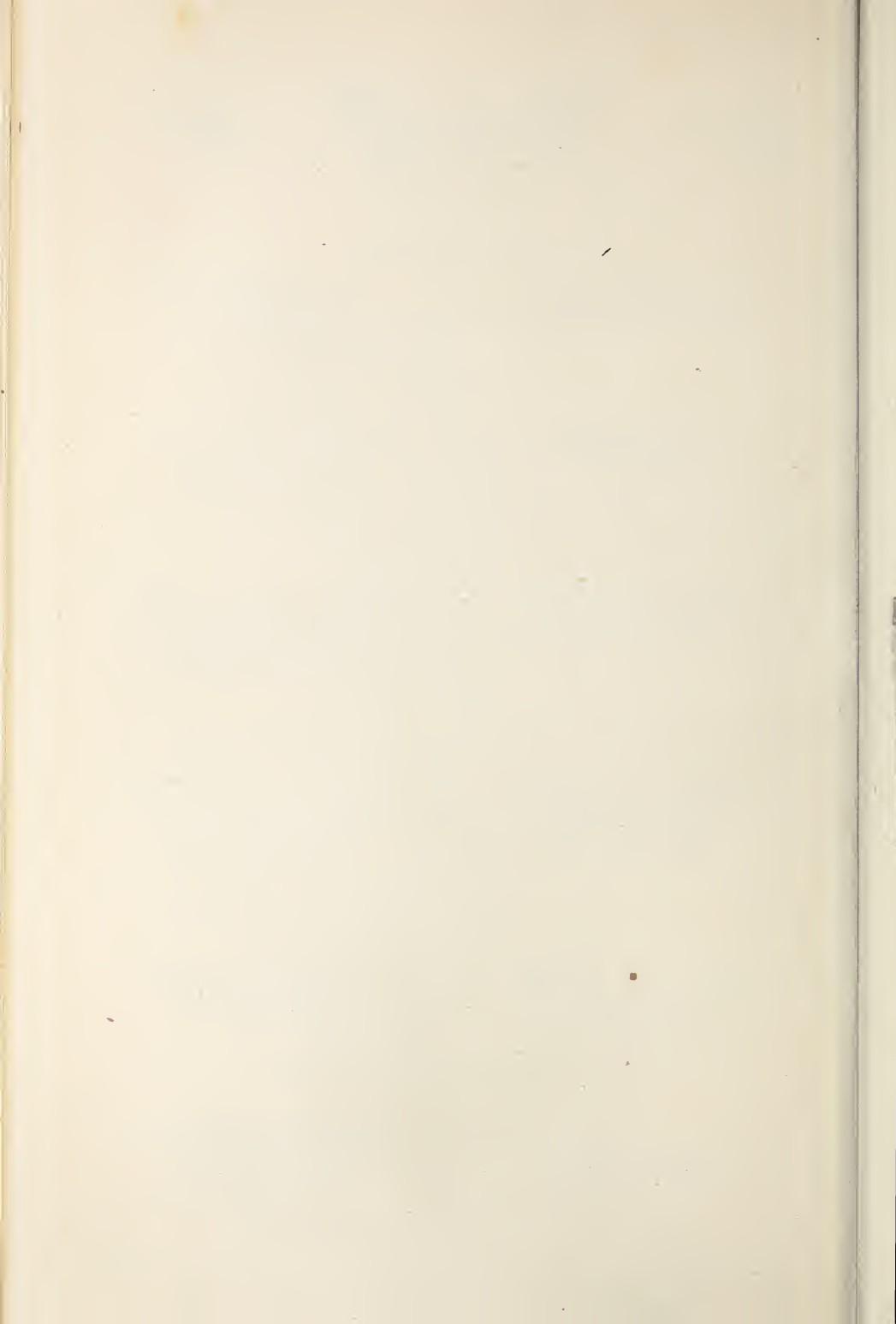




EXPLANATION OF PLATE.

1. **Epischnia Bankesiella*, Richardson, nov. spec., from Portland.
- 1a. ,, ,, ,, ; head of male, magnified ; side and back views.
- 1b. ,, ,, ,, ; head of female, magnified ; side and back views.
2. *Chauliodus Insecurellus*, Stn., from Purbeck, p. 211.
3. *Acrolepia Marcidella*, Curt., from Purbeck, p. 209.
4. *Crambus Alpinellus*, Hub., from Purbeck, p. 202.
5. *Coleophora Flavaginella*, Lienig, from Portland.
See Proc. Dors. Nat. Hist. and Antiq. F. Club viii., p. 59.
- 5a. Case made by the larva of C. Flavaginella.
6. *Butalis Siccella*, Zell., from near Weymouth.
See Proc. Dors. Nat. Hist. and Antiq. F. Club ix., p. 118.
- 6a. *Butalis Variella*, Steph., from Bloxworth, in collection of Rev. O. P. Cambridge, for comparison with the preceding species.
7. *Nepticula Centifoliella*, Zell., from Portland.
See remarks at end of preceding Paper on E. Bankesiella, p. 195.
8. *Scoparia Dubitalis*, Hub., var. *Purbeckensis*, Bankes, from Purbeck, p. 202.
9. ,, ,, ,, , var. *Ingratella*, Zell., from Portland, p. 202. In collection of Rev. O. P. Cambridge.
10. ,, ,, ,, , unnamed variety, from Portland, in collection of Rev. O. P. Cambridge, for comparison with the above.
11. *Cosmopteryx Schmidiella*, Frey., var. *Obsoleta*, Bankes, from Purbeck, p. 211.
- 11a. ,, ,, ,, , wing of typical specimen for comparison.

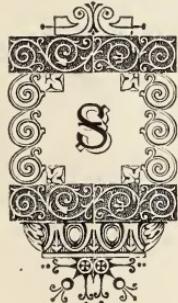
* For description of this moth see preceding Paper, p. 192.





First Supplement to the "Lepidoptera of the Isle of Purbeck."

By E. R. BANKES, M.A., F.E.S.



SINCE the publication in 1885 ("Proceedings," vol. vi.) of the list of Lepidoptera observed in the Isle of Purbeck up till that time, considerable and most satisfactory progress has been made with the work, and the result of recent researches has even exceeded all expectation. Not only have numerous fresh localities for species already recorded been noted, but many new and rare insects have been captured, of which a considerable number had not previously been observed in Dorset ; and special attention must be drawn in passing to such great prizes as *Anosia Plexippus*, *Plusia Ni*, *Crambus Alpinellus*, *Eupaecilia Pallidana*, *Diplodoma Marginepunctella*, *Acrolepia Marcidella*, *Cosmopteryx Schmidella*, *Chauliodus Insecurellus*, *Pterophorus Paludum*, and *P. Spilodactylus*.

In the former paper we enumerated 879 species of Lepidoptera as occurring in Purbeck, and in the following supplement we are very pleased to be able to give the names of 156 additional species (exclusive of all local varieties and substituted species), thus bringing up the total number to 1,035. If it be remembered that, at

the present time, only 2,102 different kinds of butterflies and moths are known to exist in the British Isles, the peculiar richness of the insect fauna of Purbeck will be the more readily appreciated ; and we much doubt whether any similar district of such very limited area can boast of such an extensive list.

It should here be stated that both in the former List, as well as in the present Supplement, the Rev. C. R. Digby and myself are entirely responsible for all the records given ; for, unless otherwise stated, the various captures have, in almost every instance, been made by ourselves. This statement was not made in the original preface because we assumed that it would be taken for granted ; but such has not always been the case (*vide "Entomologist,"* xix., p. 95).

N.B.—Species marked thus * have not previously been recorded from the county of Dorset.

D I U R N I.
N Y M P H A L I D Æ.
LIMENITIS, F.

Limenitis Sibylla, L., Studland ; rare.

D A N A I D Æ.
ANOSIA, L.

*Anosia Plexippus, L., one specimen of this splendid North American butterfly was taken at Swanage by Mr. J. E. Mowlem on Aug. 19th, 1886 ("Entomologist" xix. p. 247) ; and another was captured at Whitecliff Farm, near Swanage, by a labourer in the beginning of September, in the same year (*vide the "Field,"* Oct. 2nd, 1886).

L Y C Æ N I D Æ.
THECLA, F.

Thecla Quercus, L., Rempstone.

N O C T U R N I .

SPHINGIDÆ.

CHÆROCAMPA, *D.*

Chærocampa Porcellus, L., Remptstone.

,, Elpenor, L., Corfe.

P R O C R I D Æ.

PROCRIS, *F.*

Procris Statices, L., Corfe; very local. Swanage; found plentifully by the Rev. G. C. Green, vicar of Modbury, Devon, and recorded by him in his "Natural History and Sport" p. 49.

L I T H O S I D Æ .

LITHOSIA, *F.*

Lithosia Deplana, E., Studland.

,, Complana, L., Studland.

E U C H E L I D Æ .

DEIOPEIA, *Ss.*

Deiopeia Pulchella, L., a fine specimen of this great rarity was taken in a meadow at Swanage by Mr. H. Stafford Gustard on Sept. 1st, 1871, and recorded in the "Entomologist," V., p. 413. Although this species has been previously included in the Purbeck list, the above interesting record of its occurrence had not then been observed.

G E O M E T R Æ .

GEOMETRIDÆ.

GEOMETRA, *B.*

Geometra Papilionaria, L., Littlesea birches.

E P H Y R I D Æ .

EPHYRA, *D.*

*Ephyra Trilinearia, Bk., Studland.

A C I D A L I D Æ .

ACIDALIA, *T.*

Acidalia Interjectaria, B., common.

L A R E N T I I D Æ .

EMMELESIA, *Ss.*

Emmelesia Unifasciata, H., Studland; at light.

EUPitheCIA, *C.*

Eupithecia Absynthiata, L., Kimmeridge coast; the larvæ abundant on ragwort.

,, Subciliata, G., Corfe; the larva may be beaten from flowers of maple.

,, Dodoneata, G., Corfe; one taken on May 18th, 1889.

CIDARIA, *Tr.*

Cidaria Picata, H., Studland.

D R E P A N U L A E .

DREPANULIDÆ.

PLATYPTERYX, *Ls.*

Platypteryx Lacertula, H., Studland; the larva on birch.

PSEUDO-BOMBYCES.

NOTODONTIDÆ.

PTILODONTIS, *Ss.*

Ptilodontis Palpina, L., Corfe, Studland.

N O C T U A E .

BOMBYCOIDÆ.

ACRONYCTA, *Tr.*

Acronycta Tridens, S.V., Corfe.

L E U C A N I D Æ .

NONAGRIA, *O.*Nonagria Lutosa, H., Swanage coast; a few taken amongst *Arundo Phragmites*.

APAMIDÆ.

XYLOPHASIA, *Ss.*

Xylophasia Rurea, F., Corfe.

MAMESTRA, *O.*

Mamestra Albicolon, H., Swanage; taken by Mr. E. D. Nevinson in 1885.

N O C T U I D Æ.

AGROTIS, *O.*

Agrotis Cursoria, Hf., a few specimens of either this, or a closely allied but undetermined species, have been taken at Studland by the Rev. C. R. Digby.

TRIPHÆNA, *O.*

Triphæna Fimbria, L., Studland.

NOCTUA, *L.*

Noctua Triangulum, Hf., Corfe; at sugar.

ORTHOSIDÆ.

TÆNIOCAMPA, *G.*

Tæniocampa Populeti, F., Corfe; one specimen taken at sallow bloom.

XANTHIA, *O.*

Xanthia Citrago, L., Rempstone; one found, just after emergence, drying its wings under a lime-tree.

C O S M I D Æ.

TETHEA, *O.*

*Tethea Subtusa, S.V., Corfe, bred from a larva found on black poplar.

HADENIDÆ.

HECATERA, *G.*

Hecatera Serena, S.V., Corfe, Swanage; scarce.

XYLINIDÆ.

CUCULLIA, *Sk.*

Cucullia Umbratica, L., Corfe, at light; Studland.

P L U S I D Æ.

PLUSIA, *Tr.*

*Plusia Ni, H., a beautiful specimen of this exceedingly rare species was captured on the wing near Swanage by Mr. E. D. Nevinson on the evening of Aug. 10th, 1885. It has been duly identified by the authorities at the South Kensington Museum.

PYRALIDES.

PYRALIDÆ.

PYRALIS, L.

Pyralis Glauccinalis, L., Studland.

SCOPARIIDÆ.

SCOPARIA, Hw.

Scoparia Cembræ, Hw., Corfe, Swanage.

var. Zelleri, Wk., Swanage coast; occasionally met with.

,, Dubitalis, H.,

var. Ingratella, Zell., Swanage and Kimmeridge coasts; not uncommon.

var. Purbeckensis, Banks, a few specimens of this magnificent variety (which exactly corresponds with the whitest form of *S. Mercurella* var. *Portlandica*) have been taken by myself on the Swanage coast.

Scoparia Mercurella, L.,

var. Concinnella, Curt., Corfe.

CRAMBITES.

CRAMBIDÆ.

CRAMBUS, F.

*Crambus Alpinellus, H., Studland; one taken at light by the Rev. C. R. Digby on Aug. 10th, 1888.

,, Selasellus, H., Studland, Corfe; not uncommon in bogs on the heath.

PHYCIDÆ.

PHYCIS, F.

*Phycis Adornatella, D., common amongst wild thyme on the downs. This species is erroneously recorded as *P. Subornatella* in both the "Lepidoptera of Purbeck" and the "Lepidoptera of Dorset." The true *Subornatella*, Zell. (*teste* Mr. C. G.

Barrett), with which the above species is continually being confounded, does not, we believe, occur in this county.

Phycis Roborella, S.V., Rempstone ; bred from larva on oak.

ONCOCERA, *Ss.*

Oncocera Ahenella, S.V., Swanage coast and downs.

T O R T R I C E S.

TORTRICIDÆ.

PERONEA, *C.*

Peronea Ferrugana, S.V., Corfe.

P E N T H I N I DÆ.

PENTHINA, *Tr.*

Penthina Fuligana, Hb. (= *Ustulana*, Haw.), Corfe ; two specimens taken on June 29th, 1887. The larva, which, until recently, was quite unknown, has lately been found by Mr. G. W. Bird feeding in the rootstocks and leaves of bugle (*Ajuga reptans*) in the spring.

S E R I C O R I DÆ.

SERICORIS, *Tr.*

Sericoris Conchana, H., Studland, on the downs. Corfe.

S C I A P H I L I DÆ.

ERIOPSELA, *G.*

Eriopsela Fractifasciana, Hw., Swanage ; locally common on the downs.

SCIAPHILA, *Tr.*

Sciaphila Perterana, G., Swanage coast ; not uncommon.

„ *Hybridana*, H., Studland.

GRAPHOLITHIDÆ.

BACTRA, *Ss.*

Bactra Lanceolana, H., a fine large maritime form of this common insect has been met with along the edges of Poole Harbour among *Scirpus maritimus*, in the stems of which the larva

feeds. The male expands $8\frac{1}{2}$ —9 lines, while the female measures 11—12 lines. It is thought by some to be probably a distinct species; but no tangible distinction has been detected between the imagines or the larvæ, and the difference in the food-plants would readily account for the difference in the size of the moths. It is noticeable, however, that in the ordinary form the males are, perhaps, a trifle larger than the females, whereas in this handsome sea form the females are by far the larger of the two.

GRAPHLITHA, Tr.

Grapholitha Cinerana, Haw., Corfe; scarce.

PHLŒODES, G.

Phlœodes Immundana, F.R., Corfe; the first brood has been bred sparingly from alder catkins.

SEMASIA, G.

Semasia Ianthinana, D., Studland.

„ *Wœberana*, S.V., Corfe, Holme, Studland; the larva is not uncommon under the bark of fruit trees.

COCCYX, Tr.

Coccyx Nanana, Tr., Corfe, Studland; scarce.

RETINIA, G.

**Retinia Buoliana*, S.V., Studland, Rempstone; the larva is locally common in the shoots of young Scotch firs, doing considerable damage to them. N.B.—This species is erroneously recorded in our former list as *R. Pinicolana*, with which it is constantly confused, and which has not yet been met with in Purbeck.

„ *Pinivorana*, Z., Studland, Rempstone.

STIGMONOTA, *G.*

Stigmonota Regiana, Z., Corfe ; the larvæ and pupæ found under peeling bark of sycamore in the spring.

* ,, Roseticolana, Z., Corfe ; larvæ in hips of wild rose.

DICRORAMPHA, *G.*

*Dierorampha Saturnana, G., Kimmeridge coast.

* ,, Senectana, G., Kimmeridge coast ; one specimen, which has been identified by Mr. W. Warren as this rare species, was taken by the author on June 16th, 1884.

* ,, Tanaceti, Wlk., Kimmeridge coast.

* ,, Consortana, Ss., Corfe ; bred from larvæ in shoots of ox-eye daisy.

CATOPTRIA, *G.*

*Catoptria Parvulana, Wlk., Swanage coast ; rare.

 ,, Cana, Hw., common on the downs and along the coast.

* ,, Tripoliana, Ba., Poole Harbour ; the larvæ in seed-heads of *Aster tripolium*.

 ,, Expallidana, Hw., Kimmeridge coast, rare ; two specimens taken on July 22nd, 1884.

* ,, Citrana, H., Studland ; one taken in a bog on the heath !

CONCHYLIDÆ.

LOBESIA, *G.*

*Lobesia Reliquana, H., Rempstone, Swanage coast ; scarce.

EUPŒCILIA, *Ss.*

*Eupœcilia Nana, Hw., Studland, Rempstone ; common amongst birch.

 ,, Hybridellana, H., Studland, Swanage coast ; rare.

 ,, Affinitana, Dg., Poole Harbour ; not uncommon in the saltmarshes.

 ,, Vectisana, Wsd., Poole Harbour ; plentiful in the saltmarshes.

**Eupœcilia Implicitana*, H.S., Studland ; at light.

* „ *Pallidana*, Z., Studland ; very local. The larva was first discovered by the Rev. C. R. Digby in August, 1886, feeding in the seed-heads of *Jasione montana*.

ARGYROLEPIA, Ss.

Argyrolepia Baumanniana, S.V., Corfe ; not uncommon in one very small rough field.

CONCHYLIS, Tr.

Conchylis Dilucidana, Ss., Swanage coast ; among wild parsnip.

T I N E AÆ.

P S Y C H I D A E.

PSYCHE, Br.

**Psyche Pullella*, Br., Wych ; the males have been met with flying among rushes and grass in the hot sunshine.

SOLENOBIA, Z.

Solenobia Triquetrella, H., cases, which, in all probability, belong to this species, are common on rocks and stones on the Swanage coast ; but, although numbers of them have been collected, so far nothing but the wingless females have been bred.

TINEIDÆ.

DIPLODOMA, Z.

**Diplodoma Marginepunctella*, Ss., Studland ; one example of this scarce insect was taken by myself on July 13th, 1888.

PHYGAS, Tr.

Phygas Birdella, C., Swanage coast, Corfe ; always occurs singly.

SCARDIA, Tr.

Scardia Carpinetella, G., Rempstone ; scarce,

TINEA, *Stn.*

Tinea Misella, Z., Corfe.

*, " Merdella, Z., Corfe.

LAMPRONIA, *Z.*

Lampronia Quadripunctella, F., Corfe, Studland, Swanage coast ;
 not uncommon among wild and
 cultivated roses.

INCURVARIA, *Hw.*

Incurvaria Oehlmanniella, H., Corfe.

NEMOPHORA, *H.*

Nemophora Metaxella, H., Corfe ; not uncommon in damp places
 in woods.

ADELA, *Lt.*

Adela Fibulella, S.V., Swanage.

,, Sulzella, S.V., Ballard down.

YPONOMEUTIDÆ.

SWAMMERDAMIA, *Stn.*

Swammerdamia Spiniella, Hb., Corfe.

YPONOMEUTA, *Lt.*

Yponomeuta Cognatella, H., Corfe ; the larvæ, which live gregariously in loose silken webs, are common on spindle.

PLUTELLIDÆ.

PTEROXIA, *G.*

Pteroxia Caudella, L., Corfe ; taken at sallow bloom after hibernation.

GELECHIDÆ.

ENICOSTOMA, *Ss.*

Enicostoma Lobella, S.V., Studland ; beaten out of sloe bushes.

DEPRESSARIA, *Hw.*

Depressaria Atomella, S.V., Church Knowle, Swanage ; bred freely from larvæ in shoots of *Genista tinctoria*.

,, Alstræmeriella, L., Corfe ; rare.

,, Vaccinella, H., Corfe ; rare,

- Depressaria Capreolella, Z., Corfe, Swanage coast ; scarce.
 " Conterminella, Z., Studland.
 " Ciliella, Stn., Corfe, Kimmeridge coast ; occasionally met with.
 " Pulcherrimella, Stn., Corfe, Studland, Swanage ; larva common on *Bunium flexuosum*.
 " Weirella, Stn., Corfe.
 " Ultimella, Stn., Swanage coast ; scarce.
 " Discipunctella, H.S., Corfe ; scarce.

GELECHIA, *Stn.*

- Gelechia Lentiginosella, Z., Church Knowle, Swanage coast ; the larvæ in shoots of *Genista tinctoria*.
 * " Velocella, Fisch., Studland ; one taken by the Rev. C. R. Digby in July, 1889.
 " Artemisiella, Tr., Swanage coast ; occasionally taken on the downs.
 " Affinella, Hw., Studland.
 " Lyellella, C., Corfe ; rare.
 " Distinctella, Z., Studland ; a few have been taken on the heath.
 " Leucomelanella, Z., Swanage coast ; a few have been bred from larvæ in spun shoots of *Silene maritima*.
 * " Instabilella, Dg. (Ocellatella, Stn.), Poole Harbour ; the larva on *Atriplex portulacoides*.
 " Ocellatella, Dg. (non Stn.), Swanage coast ; the larvæ in leaves and shoots of *Beta maritima*.
 * " Albicapitella, Z., Studland ; only a few specimens have occurred. N.B.—In the previous list of Purbeck Lepidoptera this species was erroneously recorded as *G. Nanella*, which has not as yet been found in the county of Dorset.

Gelechia Ligulella, Z., Studland ; bred from larvæ on *Lotus major*. Corfe.

" Gemmella, L., Rempstone, Studland ; not common.
* " Brizella, Ti., Wych, abundant amongst *Statice armeria*.

CHELARIA, *Hw.*

Chelaria Conscriptella, H., Corfe ; scarce.

MACROCHILA, *Ss.*

*Macrochila Marginella, F., Rempstone heath ; abundant on the only few wild junipers that grow in Purbeck.

BUTALIS, *Tr.*

*Butalis Fuscocuprella, Hw., Swanage coast ; not uncommon.

PANCALIA, *Stn.*

Pancalia Lewenhoekella, L., Ballard down.

GLYPHIPTERYGIDÆ.

ACROLEPIA, *C.*

*Acrolepia Marcidella, C., Studland ; a single hybernated individual of this extremely rare species was beaten out of an old hedge and captured by the Rev. C. R. Digby on June 24th, 1886. Of this insect, which is altogether unknown on the Continent, only 5 or 6 specimens had been taken previously, and it has never been met with except after hibernation. The moth was identified by Mr. H. T. Stainton.

GLYPHIPTERYX, *Ss.*

*Glyphipteryx Cladiella, Stn., Studland, Corfe ; occurring in bogs on the heath. This is probably only a variety of *G. Thrasonella*.

* " Schœnicolella, Stn., Corfe, Studland ; locally common amongst *Schœnus nigricans*.

TINAGMA, D.

Tinagma Sericiella, Hw., Corfe.

ARGYRESTHIIDÆ.

ARGYRESTHIA, Stn.

Argyresthia Semifuscella, Hw., Corfe, Studland.

„ Dilectella, Z., Rempstone heath ; amongst wild juniper.

GRACILLARIIDÆ.

ORNIX, Z.

*Ornix Scoticella, Stn., Corfe ; not uncommon in orchards, the larvæ feeding in turned-down apple leaves in the autumn.

COLEOPHORIDÆ.

COLEOPHORA, Z.

Coleophora Alcyonipennella, Kol., Corfe. Studland, at light.

„ Vibicella, H., Studland ; one worn example at light.
This specimen is referred to in a footnote in the previous list.

* „ Albidella, H.S., Studland ; the larva on sallow.
Hitherto confounded in Britain with *C. Anatipennella*.

* „ Genistæcolella, Dbl., Rempstone heath ; larvæ locally plentiful on *Genista anglica*.

„ Lineolella, Hw., Corfe ; one bred from a larva on *Betonica officinalis*.

* „ Adjunctella, Hodgn., Poole Harbour ; plentiful in the saltmarshes amongst *Juncus Gerardii*, in the seedheads of which the larvæ feed.

* „ Wilkinsonella, Sc., Corfe ; one specimen bred from birch.

ELACHISTIDÆ.

BEDELLIA, Stn.

Bedellia Somulentella, Z., Studland, Swanage.

COSMOPTERYX, *Stn.*

*Cosmopteryx Schmidella, Frey., Corfe, very local ; the larvæ in leaves of *Vicia sepium*. A few examples of a peculiar variety have been bred, in which the central orange fascia on the fore-wings is entirely wanting. The only other British locality known at present for this species is near Wothing, in Sussex, where it was found in the larval state in 1886 by Mr. W. H. B. Fletcher, who added it to the British list.

CHAULIODUS, *Tr.*

Chauliodus Insecurella, Stn., Swanage coast, very local ; the larva feeds on *Thesium humifusum*. This species is double-brooded ; but is terribly liable to the attacks of ichneumon flies.

,, Illigerella, H., Studland ; taken by Mr. C. W. Dale.

LAVERNA, *C.*

Laverna Paludicolella, Dbl., Swanage coast ; not uncommon in the larval state on *Epilobium palustre*.

* „ Rhamniella, Z., Rempstone ; the larva in shoots of buck-thorn.

ANTISPILA, *H.S.*

Antispila Pfeifferella, F., Swanage coast.

ELACHISTA, *Stn.*

Elachista Albifrontella, H., Studland, Swanage.

,, Nigrella, H. (= Gregsonella, Stn.), Corfe, Studland ; not uncommon.

Elachista Perplexella, Stn. (= *Humiliella*, Z.), Corfe ; bred sparingly from larvæ in *Aira caespitosa*.

„ Zonariella, Tengs., Corfe ; the larva mines the leaves of *Aira caespitosa*.

* „ Scirpi, Stn., Wych ; not uncommon in the saltmarshes among beds of *Juncus Gerardi*, in which the larva must almost certainly feed in some localities, though it has not yet been bred from that plant. It is, however, known to feed in other places in *Scirpus maritimus*.

TISCHERIA, Z.

Tischeria Complanella, H., Corfe.

LITHOCOLLETIDÆ.

LITHOCOLLETIS, Z.

Lithocletis Viminella, Stn., Corfe ; bred from sallow.

„ Messaniella, Z., Corfe, Studland. N.B.—In the original Purbeck list (vol. vi.) the words “on *Ilex*,” which, by a misprint, appear as “on *Ulex*,” refer in reality to this species (which was omitted by a printer’s error), instead of to *L. Quercifoliella*, as there appears,

„ Alnifoliella, H., Corfe ; common among alders.

LYONETIIDÆ.

LYONETIA, H.

Lyonetia Clerckella, L.,

var. *Æreella*, Tr., Norden.

BUCCULATRIX, Z.

Bucculatrix Aurimaculella, Stn., Corfe ; common amongst *Chrysanthemum leucanthemum*.

NEPTICULIDÆ.

NEPTICULA, Z.

- Nepticula Atricapitella, Hw., Corfe ; bred from oak.
 „ Oxyacanthella, Db., Corfe ; bred from hawthorn.
 * „ Viscerella, Dg., Corfe ; the larva in elm leaves.
 * „ Intimella, Z., Studland ; a few have been swept off
 sallows.
 * „ Trimaculella, Hw., Corfe ; bred from poplar.
 * „ Betulicolella, Stn., Corfe ; bred from birch.
 * „ Gratirosella, Stn., Corfe ; bred from hawthorn.
 * „ Alnetella, Stn., Corfe ; bred sparingly from alder.
 * „ Continuella, Stn., Corfe ; larva not uncommon in
 birch leaves.
 * „ Luteella, Stn., Corfe ; bred from birch.

[Dele "Nep. Ulmivorella, Frr., Studland," from Purbeck list.]

P T E R O P H O R I .

PTEROPHORIDÆ.

AGDISTES, H.

- *Agdistes Bennetii, C., Wych ; one specimen taken amongst
Statice limonium.

PTEROPHORUS, Lt.

- *Pterophorus Bertrami, Roessler, Corfe ; scarce.

- * „ Paludum, Z., Corfe, Studland ; scarce. It occurs
 very sparingly in bogs on the heaths,
 but all endeavours to discover the
 larva, which is quite unknown, have
 so far been unsuccessful.
 * „ Spilodactylus, C., Swanage coast ; very local ; the
 larvae on *Marrubium vulgare*.





Report on the Returns of Rainfall
AND
Observations on the Flowering of Plants and
Appearances of Birds and Insects
IN DORSET DURING 1888.

By M. G. STUART, Hon. Sec.



At the close of the year 1887 it was resolved that an attempt should be made to collect annual records from various localities in Dorsetshire on the flowering of plants and first appearance of certain birds and insects selected for observation. For this purpose printed schedules were circulated as an experiment amongst various persons interested in the subject. At the end of the year twelve reports were sent in, of which many were very fragmentary. The printed list contained 79 plants for observation; of these 12 have been selected, and the observed dates of flowering are printed opposite to them.

A large number of returns of rainfall for various localities in Dorset have been furnished by members of the Field Club and other friends of the Society. A printed table of these is given, with a ten years' average for the locality in addition, where this

has been sent in. Additional returns of rainfall have been made for

Moreton	...	...	Total for 1888	...	40·17
Bere Regis	...	...	"	...	33·88
Wyke Regis	...	...	"	...	29·78

I regret there should be no return for Minterne, which is one of the rainiest spots in the county. The late Rector, the Rev. H. Pix, gives me the average of the last ten years as 44·89 inches. It will be seen that, although 1888 will be remembered as a very cold and wet summer, the annual average rainfall was only reached at one locality—Whatcombe—out of the six for which the average is given. A striking point is the quantity of rain recorded for November. The highest rainfall in one day at Weymouth occurred on November 12th, when 1·66in. was registered.

Mr. H. Moule, at Dorchester, remarked that in the wintry spring of 1888, whilst land plants seemed at an absolute standstill, there appeared to be no delay in the growth of water plants. In streams with ice upon them the *Ranunculus penicillatus* produced its long shoots as freely, or nearly so, as in an ordinary spring.* Mr. Eustace Banks, writing from Corfe Castle, says the cold spring and summer were succeeded "by probably the mildest autumn and winter on record ; there was a most remarkable absence of frost, and, as a natural consequence, a large amount of rain fell. During the whole of November I think the thermometer only once reached the freezing point. The results of this on all vegetation was most marked, and both garden and wild plants continued to bloom in profusion. As an illustration of this it may be mentioned that three observers gathered or noticed in the Isle of Purbeck over 100 kinds of wild flowers (exclusive of all grasses, &c.) during the month of December without any systematic search being made for them !"

The fullest series of observations have been made by Mr. H. N.

*Water plants are less susceptible to abnormal seasons than land plants, as the temperature of water is never below 40°, even when the surface is covered over by a layer of ice.

Richardson, residing at Chickerell, near Weymouth, Mr. Eustace Bankes, Corfe Castle, and Dr. Curme, at Child Okeford, who has compiled a most extensive number of notes on the flowering of plants and appearances of birds in his immediate neighbourhood. Other observers who have made returns are Mr. Mansel Pleydell, at Whatembe, Mr. Galpin, at Keynstone, near Blandford, Mr. Moule, at Dorchester, and Mr. Penney, at Poole.

The returns for the first year can only be looked on as an experiment, the success of which will depend entirely on the permanence with which the observations are carried on from year to year and on the number who will be willing to take up the work of recording observations.

M. G. STUART,
Hon. Sec.

OBSERVATION ON THE APPEARANCE OF BIRDS IN DORSET
DURING 1888.

	Weymouth.	Whatembe.	Corfe Castle.	Keynstone.	Child Okeford.	Poole.
Cuckoo ...	Apl. 23	Apl. 23	Apl. 22	Apl. 15	Apl. 24	Apl. 10
Swallow ...	Apl. 18	Apl. 13	Apl. 14	Apl. 15	Apl. 14	Apl. 22
House Martin	Apl. 19		Apl. 25			Apl. 15
Swift ...	May 13		May 1	May 8	May 4	Apl. 29
Goatsucker..	May 9	May 7	May 11			May 17
Landrail ...	May 4		Apl. 27	May 8	May 6	
Nightingale..	Apl. 30	Apl. 25		Apl. 27	May 3	May 1
Wheatear ...	Apl. 20	Apl. 26	Apl. 2	Mar. 28		Apl. 1

OBSERVATIONS ON THE FLOWERING OF PLANTS, 1888.

		Child Okeford.	Corfe Castle.	Weymouth.
Ranunculus ficaria (Lesser Celandine) ...		Mar. 13	Feb. 26	Mar. 12
Caltha palustris (Marsh Marigold) ...		Apl. 14	Apl. 25	Apl. 20
Malva silvestris (Common Mallow) ...		May 3	June 22	June 10
Geranium Robertianum (Herb Robert) ...			May 20	May 15
Prunus spinosa (Black Thorn) ...	...	May 1	Apl. 27	Apl. 14
Tussilago farfara (Coldfoot) ...	...	Mar. 25	Mar. 15	Mar. 27
Primula Veris (Cowslip) ...	...	Apl. 12	Apl. 16	Apl. 19
Salix caprea (Common Sallow) ...			Mar. 16	Mar. 13
Narcissus pseudo Narcissus (Daffodil) ...			Mar. 29	Mar. 27
Scilla nutans (Wild Hyacinth) ...		May 5	Apl. 30	May 13
Crateegus Oxyacantha (Hawthorn) ...	...	May 24	May 26	May 21
Rosa Canina (Hedge Rose) ...	...	June 13	June 23	June 26

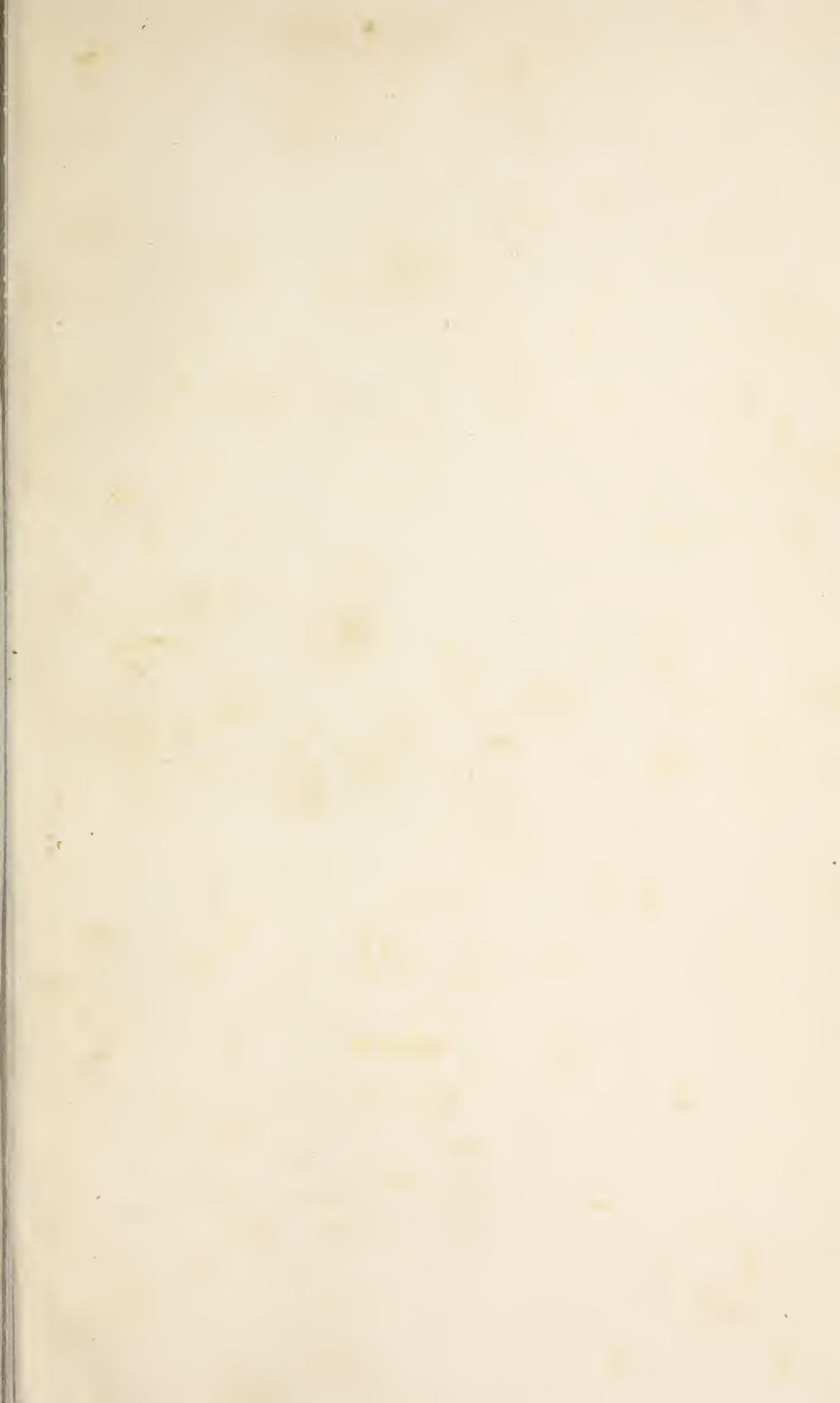
OBSERVATIONS ON THE APPEARANCE OF INSECTS, 1888.

		Weymouth.	Corfe Castle.	Whatcombe.
Cockchafer		May 21	June 4	
Bloody Nosed Beetle ...		Apl. 19	Apl. 12	May 5
Glowworm		June 29		
Wasp		May 7	May 8	May 19
White or Cabbage Butterfly...		May 17	May 9	May 4
Small Garden White Butterfly		May 18	May 7	Apl. 23
Orange tip Butterfly ...		May 21	June 1	May 4
Meadow Brown Butterfly ...		July 5	July 6	

RAINFALL RETURNS FOR DORSET DURING 1888.

	Swanage.	Poole.	Smedmore.	Creech Grange.	Weymouth. [®]	Lytchett Minster.	Whatcombe.	Tarrant Keynstone.	Gillingham.	Shaftesbury.	Bloxworth.
January ..	1.65	1.27	1.68	2. 1	1.35	1.20	1.55	1.78	1.31	1.20	1.60
February ..	0.92	.75	0.73	0.69	.60	1.01	.75	.85	1.71	1.93	0.67
March ..	3.46	3.49	4. 7	4.69	3.02	3.47	5.07	3.86	3.73	3.57	3.71
April ..	1.29	1.09	1.22	2.04	1.10	1.04	2.39	1.88	1.91	2.50	1.43
May ..	1.93	1.91	1.72	2.15	1.63	2.01	2.43	2.09	1.34	1.17	2.25
June ..	2.37	2.79	2.41	3.26	3.35	2.61	3.23	2.89	2.58	2.85	3.17
July ..	3.08	3.00	2.72	3.95	2.97	3.14	5.96	2.97	6.00	6.05	4.44
August ..	2.09	1.91	1.79	3.52	1.89	2.56	2.26	1.94	1.79	1.72	2.17
September ..	1.83	1.48	1.89	2.21	1.09	1.50	1.49	1.38	1.16	1.56	1.66
October ..	2.35	2.46	2.49	2.79	2.68	2.20	2.65	2.14	1.80	1.91	2.47
November ..	5.87	5.98	5.47	5.17	7.21	6.63	9.38	6.93	6.72	6.87	7.74
December ..	2.03	2.31	1.67	2.93	2.08	2.42	3.70	3.	3.42	2.49	3.03
Total ..	28.87	28.44	27.72	38.41	28.97	29.79	40.86	31.71	33.53	33.82	34.36
Average during the last ten years ..	30.10			41.004			38.42	32.917	33.81	35.629	





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